THE LANCET.

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CLINICAL LECTURE
ON A
CASE OF IDIOPATHIC DROPSY,
DELIVERED AT
CHARING-CROSS HOSPITAL,
BY
Dr. W. D. CHOWNE,

Physician to the Hospital, and Lecturer on Midwifery at Charing-cross Hospital School.

History of the case. Danger of trusting to first impressions, and forming a hasty diagnosis. What was the cause of the dropsy in this case? Reasons for thinking it had not its origin in disease either of the chest or abdomen. Dropsy from suppression of cutaneous eruptions, and of the perspiration. Origin of dropsy in debility and plethora. Connection of dropsy with scrofula. Treatment pursued in this case.

Dr. Chowne said, that he would to-day take a short review of the case of a child with dropsy, the progress of whose malady and treatment the students had witnessed with him.

Mary Rock, nine years of age, complexion fair, eyes blue, hair sandy, was admitted into the hospital on July the 6th; has had hooping-cough, measles, and the cow-pox; had scarlatina at about one year old, and an eruptive disease, the character of which could not at present be ascertained; twelve months since, this, however, lasted only a few days; her general health, in other respects, has been always good. She has not been so ill as to keep her bed for the last three years; she ate well, and has always had sufficiently nutritious diet; has not been subject to glandular swellings, or other indication of scrofula, nor to difficulty of breathing, nor palpitations; could take exercise without inconvenience; has never had hæmoptysis, or other hæmorrhage; has never had jaundice, or any obvious symptoms of disordered liver. It has been noticed that she has been subject to a bad odour of the breath. The first appearance of illness was about two months prior to her admission, and the first peculiarity observed was enlargement of the belly; there was neither before, nor at the time, nor since, any dyspnœa, nor swelling of the face in the morning, nor of the feet in the evening. The bowels did not show any signs of being out of order; no exact observation, however, respecting them was made. The enlargement of the belly appeared to be the only unusual circumstance during the first month; at that time the appetite began to be delicate, her spirits depressed, and she grew thinner and paler than usual. Her bowels had continued to act regularly; nothing remarkable in the renal secretion, except that occasionally it passed more frequently than common; there was not at any time a sediment observed. Her mother had dropsy at the time when our patient was born. He (Dr. Chowne) could not learn of what particular character, but she lingered after her confinement about nine months, and then died dropsical. He did not mention this, however, as an event influencing in any way the present health of the child. Upon a first view of this patient, as she walked about the ward, or as she pursued her little amusements by her own bedside, the general impression was, that she should be classed rather amongst the convalescents than with newly-admitted patients: her appearance, indeed, was such, that an oversight as to the real state of her health might have been easily committed; the body was large, though not strikingly so: children of her age have often as much enlargement without any formidable malady; and a good hint may be taken from her case not to trust to first impressions, or to hasty off-hand diagnosis. A child of about thirteen months old was shown to him (Dr. Chowne) some time since, actually to let him see how exceedingly well she was, and how much she had improved after a short sojourn at the sea-side. The nurse and the mother were both highly satisfied with the child's state in every respect but one, a somewhat too large abdomen; but this was by them attributed to mere want of exercise, a difficulty which would be removed as soon as the child could run alone. Instead of an enlargement, however, of so

simple a nature, he found it a confirmed case of ascites. The enlargement in the present patient was not great, and when she was lying in bed she appeared to be still less than when she was up, from the circumstance of the fluid being more diffused than it was when her position was erect. The fluctuation was not strongly perceptible while she was lying on her back, but when turned upon her side, the fluid gravitated to the side on which she lay, and a very satisfactory confirmation of her state was obtained by percussion; the sound was dull, and fluctuation was evident; and upon changing sides, the dull sound and the fluctuation changed their situation. Hence there was no difficulty in determining that ascites was the disease. Ascites, however, was rather the disease of advanced life than of childhood; and a question naturally arose, as to whether our patient laboured under any other disease to which the ascites was secondary, for that was most commonly, though not always, the case. Generally, some viscus or viscera would have gone into a morbid state, leading to ascites; but in some instances the dropsy would be so far idiopathic, as to depend upon a mere disturbance of balance between secretion and absorption, and which might exist under a state of plethora on the one hand, or of anæmia and debility on the other.

In looking at this patient with a view of determining the cause of the ascites, we might first call to mind the broad general rule, that dropsy from disease or from disturbed functions of the thoracic viscera did not show itself first in the abdomen, and that dropsy from disease or from disturbed functions of the abdominal viscera often first showed itself by effusion within that cavity. On looking at the chest, moreover, we perceived that it was round and well formed, and expanded and collapsed freely, and at all parts equally; the sound was good in all parts on percussion, and over the region of the heart it was not dull over a larger space than was consistent with a normal size of that organ; the heart's actions were regular, not too strong, and the sounds were normal; the respiration was free, audible at all parts of the lungs, and not disturbed by exercise: hence, independently of the general rule, we had, in the absence of special symptoms, reason not to suspect the contents of the thorax. In examining the abdomen with reference to the discovery of organic disease, the means used were not more successful; as they, the pupils, were aware, it had been carefully ascertained that there was no perceptible enlargement or hardening of the liver, nor of the spleen, neither had any enlargement of the mesenteric glands been discovered. The abdomen, indeed, in all respects seemed perfectly natural, except as regarded its fulness, the consequence of effusion; and the lecturer did not find, by manual examination, any organ within the abdomen in such a state as to induce him to consider that the ascites had its origin in either. He did not find from any inquiry he had been able to make, that this patient had had peritonitis, either acute or chronic; she had been without pain in the abdomen, and without all the symptoms usually attending that disease, and it was to be recollected that the swelling of the abdomen had existed four weeks before any symptom of illness had showed itself.

Notwithstanding the interest with which we directed our attention to the kidneys generally in cases of dropsy, and inquired into the quantity and character of their secretions, these organs in the present instance did not appear to be implicated in the attack; there did not appear to be any deficiency in quantity, and there had not been at any time, when the quality had been examined into, any appearance of an albuminous character.

It did not appear, then, that they could look to any particular organ either thoracic or abdominal as the origin, and that the effusion depended upon some more general cause originating in what might be called the condition of the system. We sometimes saw ascites supervene on the suppression of cutaneous eruptions, and also upon suppressed perspirations; but this patient had not had any eruptive disease since the one spoken of in the beginning of the lecture, and that was of short duration, was not severe, and occurred twelve months prior to her admission into the hospital. Scarlet fever, the eruptive disease, most commonly followed by dropsy, she had when twelve months old.

There was very good reason to believe that the suppression of perspiration was not an uncommon cause of dropsy, and especially when the suppression was the continued effect of a cold, impure atmosphere, impregnated with miasmata. In those countries where the climate was of the opposite kind, as Arabia, Egypt, and Syria, dropsy was so uncommon as to have been a subject of general remark. Where dropsy was caused by the influence of a cold, damp miasmatous atmosphere, it appeared certainly more reasonable to attribute it to the suppression of perspiration, than to adopt the notion that moisture was absorbed from the air into the system, as was believed by Erastus, Van Swieten, and De Haen. This little patient, however, did not appear to have been subject to perspirations, and certainly had not suffered from cold miasmatous atmosphere. They did not find that she had been subject to hæmorrhage in any way; a question always of interest where dropsy appeared to depend upon a general or constitutional cause, in contra-distinction to a local one. Where there had been hæmorrhage, we were led to consider whether it originated in a

state of plethora, and whether the system remaining still plethoric, the dropsy might not be attributed to an overloaded condition of the vascular system; or whether hæmorrhage supervening upon an already delicate state, serous, effusion might not afterwards be caused by the still greater debility induced. Although this patient had not had hæmorrhage, it was nevertheless necessary to consider the state of the vascular system; seeing that plethora on the one hand, and anæmia on the other, were prolific of dropsical effusions.

With regard to vascular fulness, this patient did not present any symptoms indicative of that condition; the pulse was regular and steady, rather small, and varying from 90 to 105; she had no headach, nor heaviness, nor drowsiness; the countenance was rather pale, and there was no particular heat of the skin; she rather presented the appearance of a circulation below par, and the general signs of debility. With debility, indeed, her disease was certainly associated, and there was, he thought, reason to consider that upon debility it depended. It appeared to be a case of ascites, of that kind which might be called idiopathic: that idiopathic dropsy might occur, most authors admitted; yet there was always room to take exception to the term, because there must be some morbid condition, general or especial, on which it depended. How far this was a valid exception, they would not now stay to inquire.

Assuming debility tending to destroy the balance of secretion and absorption to be the cause of the accumulation of fluid in this case, it would be well to resolve, as far as possible, upon what the debility depended. Amongst those conditions of the constitution sometimes causing dropsy, it was proper that scrofula should not be overlooked. So far as complexion, delicacy of skin, and general appearance were concerned, we might certainly consider this patient to partake of scrofulous diathesis, although most likely in a slight degree only; the more marked indications, indeed, were absent; there was no swelling of the septum, nor of the alæ nasi, nor of the upper lip, nor glandular swellings in the back of the neck, behind the ears, on the sides of the neck, in the arm-pits, nor in the inguinal regions; neither were there cicatrices to show that any had existed. Whether there might be some mesenteric glands slightly enlarged, did not appear to be certain; the lecturer, however, was disposed to think that it could not be to any great extent. The attenuation of the muscular substance was not great, the skin was not dry and scurfy, and the temper was not peevish and wayward, as it was generally found to be when the mesenteric glands were much diseased.

With regard to scrofula, however, in relation to the present case, we could scarcely see any further connection, than that there was a scrofulous diathesis which might concur with other influences to bring about the excess of secretion over absorption. Upon her admission into the hospital, the only obvious functional derangements appeared to be those of the prima via; and in looking for an object to which to direct the remedies, these presented themselves conspicuously, and almost alone. There had been for some time a failing appetite and a sickly feeling; a bad odour of the breath, with depressed spirits, weakness, and a slight degree of wasting; the pulse rather weak; the tongue not clean, of a slaty brown colour, and slimy; and the dejections were unnatural. In this state of health there certainly existed an indirect cause, and as appeared to the lecturer the cause of the debility. Under these indications calomel purgatives were prescribed, with other aperients occasionally to keep up regular actions of the bowels, without incurring the risk of ptyalism; the dejections were black, and altogether extremely bad. The plan of treatment since pursued had been directed to the same object, the improvement of the digestive process; it had not been a complicated treatment, for the case did not require it. She had not had any drastic purgative, as elaterium, with the view of occasioning copious watery evacuations: to improve the secretions of the bowels appeared to be of prior importance. She had not had diuretics, for the renal secretions were not deficient, except occasionally in a slight degree, —in a degree, indeed, quite compatible with the kidneys being in a state to perform their office naturally, for great fluctuations, as to quantity of secretion, was in perfect accordance with a healthy state; there was sometimes rather more than the common quantity. The treatment, then, had been limited to calomel purgatives, and other aperients, not drastic, chiefly decoctum aloes compositum, rhubarb, combined with some carminative, and latterly with infusion of cascarilla; she had not had elaterium, cream of tartar, jalap, nor any of the hydragogue class of purgatives; her diet had been quite plain, and moderately nutritious; she had not had any wine, porter, or spirit. He mentioned particularly that she had not had spirit, because if he had administered gin, which he sometimes did, to increase the renal secretions, she would, in fact, strictly, though not technically speaking, have been under the influence of diuretic medicine. During the first few days of treatment, it was constantly found, from the sister's report, that the effect of the calomel was to carry off black dejections, with all the characteristics of a defective process of digestion: gradually the discoloration of the tongue, and the slimy, rather than mere mucous, moisture with which it was imbued, disappeared; and an improvement in every way desirable had now taken place in the breath, as it was not now unpleasant. They

had also the satisfaction of seeing the abdominal fulness decrease; and at present the fluid that remained did not exceed a third of the original quantity which was perceptible upon her admission. The size and fluctuation so easily perceived on her admission were considerably less. The improvement that had thus far taken place, was such as to induce him for the present to trust to the treatment already in progress, and he had not much hesitation in pronouncing a favourable prognosis.

CASE OF CHOREA.

The youth with chorea spoken of in a previous lecture, and who was still under treatment, had been steadily getting better. The same medicines and diet had been continued. He had had the satisfaction yesterday of seeing him walk across the ward with a basin of milk in his hand; he carried it quite steadily, a sufficient proof of improvement both in the upper and lower extremities; his appearance, as regarded healthiness of countenance, &c., was nearly as it was when he last spoke of him. It was to be recollected, however, that he still occasionally took doses of aperient medicine. He (Dr. Chowne) expected that he would soon be able to leave the hospital.

THE

PHYSIOLOGY AND PATHOLOGY

OF

THE SALIVA.

By Samuel Wright, M.D. Edin., F.S.A., Physician to the Birmingham General Dispensary, &c. &c.

(Continued from p. 567.)

CASUAL SALIVATION.

This kind of ptyalism is of frequent occurrence in dyspeptic affections.—"Ex dictis quoque facile deduci potest ratio, quare sub nausea, et instante vomitu, fluat abundantius saliva ex ore, quam etiam Hippocrates et Galenus præcedere tradiderunt: item cur in ardore ventriculi sive soda, tenuis saliva in os excurrat, præcedente quodam molesto pressorio et tensorio sensu in ventriculo, perceptibili et veluti leniori constrictione per œsophagum ad fauces usque ascendente. Eandem quoque suppeditamus causam in illo ptyalismo, qui cruditate ventriculi accidit, qua de re vid. Broen. (Animadvers. in Prax. Craanii, p. m. 260.) Formalem hanc causam quoque salivæ illa copiosior in os effusio sufficienter indigitat, quæ in cardialgia, dolore ventriculi molestissimo acuto attenditur. His omnibus et quæ a nobis propter brevitatem, cui studere fas est, omittantur, salivationem speciebus facili labore mederi possumus: cum enim materiæ peccantis in ventriculo et primis viis suspicio subsit, optime medela per corrigentia vel per evacuantia aut ἄνω vel κάτω instituitur; sin causa formalis motus irregularis consuetudinalis ex alia parte vitiata huc trajecta, antispasmodica et proba diæta observata imo causa fundamentalis sublata omne absolvunt punctum." (Roper et Gasto, de Salivatione Critica, Ext. in Haller. Disp., tom. i., p. 453.) This casual salivation, however, may be either the cause or the consequence of dyspepsia.

The ailment commonly known by the name of pyrosis, is one with which the salivary glands and their secretion are implicated, in the chief if not in the entire cases of its occurrence. The various and contradictory opinions of medical writers upon this disease, the intimate pathology of which is little understood, are for the most part referrible to their having regarded the stomach or the salivary apparatus as the exclusive subject of mischief, without considering the relation of each to the other, and their disposition to sympathise, not less in morbid than in healthy states. Thus, Cullen defines pyrosis to be "a spasm of the muscular fibres of the stomach, which is afterwards in a certain manner communicated to the blood-vessels and exhalents, so as to increase the impetus of the fluids in these vessels, while a constriction takes place in their extremities. While, therefore, the increased impetus determines a greater quantity than usual of fluids into these vessels, the constriction upon their extremities allows only the pure watery parts to be poured out, analogous as I judge, in every respect, to what happens in the diabetes hystericus." (Cullen's Works, by Professor Thomson, vol. ii., p. 466, 7.) Dr. Good, entertaining a similar opinion, thinks also that the affection may sometimes "be produced by inactivity of the proper absorbents of the stomach." "The experiments," he says, "of Magendie show that, in a state of health, all fluids disappear from the stomach with great rapidity, in consequence of the urgency of their absorption, insomuch that a ligature on the pylorus does not in the least retard their vanishing." (Study of Medicine, 3rd edit., vol. i., p. 121.) The latter part of Dr. Good's theory, however, is ably answered by Dr. Kerr with the fact that, in pyrosis, "the absorption of other fluids and the regurgitation only of the morbid product reflects a degree of improbability on the conjecture." (Cyclopædia of Practical Medicine, art. Pyrosis, Part 18, p. 581.) Dr. Seymour observes—"This disease appears to arise from increased sensibility of the nerves supplying the secreting surface of the stomach," and is often "a leading symptom of organic diseases of the stomach itself, or of the neighbouring viscera." (Lond. Med. Gazette, vol. i., p. 783.) Dr. Craigie says of pyrosis—"Its occurrence depends on a

previous unhealthy state of the stomach, induced either by improper food, or by the use of substances which exercise a deleterious effect" ... "persons liable to water-brash digest very badly, have almost invariably a bad appetite, constipated bowels, and occasional stomach or heart-burn, and are liable to suffer unequivocal dyspeptic symptoms after the use of certain articles of food." (Practice of Physic, vol. ii., p. 691, 2.) Dr. West tells us (on Water-Brash, p. 71), that pyrosis is a "dropsy of an open cavity"—that it is "a disease of the terminal exhalents" and of "serous temperaments;" and distinguishes it from "stomach gleet" by a "hot serous secretion," which, amongst other symptoms, he affirms to be characteristic of pyrosis (p. 32). He also additionally informs us (p. 47), and very astounding information it is, that "the material in true water-brash is commonly insipid, and nearly resembles that of the hydropic fluid of serous cavities!" Dr. Golding Bird believes pyrosis and gastrorrhœa to depend mainly upon a "morbid irritability of the stomach." (Lond. Med. Gazette, Aug. 27, 1841, p. 859.) Dr. Burne, on the other hand, affirms, against all the testimony in favour of spasm, irritation, and dyspepsia, being the sources of pyrosis, that the fluid is "furnished by the salivary glands and muciparous follicles of the mouth and throat;" and that by "questioning the patient closely, we shall be informed that the fluid runs from the mouth when nausea supervenes, but is not eructated or vomited as Cullen, Mason Good, Abercrombie, Andral, and others describe." (On Habitual Constipation. 1840.)

In these many discrepancies we see that our authors in general have committed the error of directing their attention too exclusively to the stomach; and that Dr. Burne in particular has been equally misled, by confining the pathology of pyrosis entirely to the salivary glands. Of the two theories, I believe Dr. Burne's to be least at fault, for I am satisfied, from long and extensive practical observation, that a case of pyrosis seldom occurs without the salivary apparatus being intimately concerned in the disorder, and that in many instances an excess of salivary secretion is the immediate source of the ailment. I do not deny that the vomiting of colourless, as well as of coloured fluids may be symptomatic of a degeneration of the stomach, or of its neighbouring organs:—it has been observed in gastric ulceration (Parry's Works, vol. ii.*)—in fungoid disease—in gastritis, hepatitis, cystitis, and hysteritis (Solenand. Bonetus, Sauvag. Nos. Meth. 2, 84,)—in tuberculated liver, the stomach being healthy—in enlarged liver and spleen, the consequence of inflammation—in renal affections (Seymour in Lond. Med. Gazette, vol. i., p. 785, 6,)—and I have myself marked its prevalence in scirrhus of the pylorus, in disease of the spleen and pancreas, and in tuberculous degeneration of the mesenteric glands. In such cases, it were little surprising if the proper function of the stomach exhibited a modification or a derangement in secreting the limpid, tasteless, fluid of pyrosis; but I should still think the evidence of chemical analysis necessary to prove that the fluid, in whole or in part, had not been furnished by the salivary glands.

Neither do I deny that pyrosis is often excited by errors in diet* and regimen, nor that it is not unfrequently attended by manifest symptoms of dyspepsia. It is common amongst the poor of Scotland, who live chiefly upon oatmeal and garden produce: Linnæus ascribes its frequency in Lapland to a bad quality and a deficient supply of bread; it occurs in Switzerland, where the inhabitants subsist mainly upon horse-chestnuts;† it often affects the dissipated and intemperate, whose stomachs have become disordered by the liberal use of ardent spirits; it is prevalent amongst tailors, shoemakers, writing-clerks, and those whose sedentary occupation involves a stooping posture; in young females it is often a consequence of tight lacing; and it is not uncommonly symptomatic of uterine disorder or of conception.

Further, the pathology of these cases has sometimes revealed an hypertrophy of the proper mucous membrane of the stomach, or a thick and adherent mucous exudation, with or without specific marks of inflammatory action. At other times the mucous follicles are observed to be remarkably developed and pale; and again, with their enlargement will there be a manifest vascularity. Lastly, the mucous membrane has been found perfectly normal, or uniformly red, or brown, or darkened, like melanosis.

* *Pyrosis ulcerosa.* Frid. Stokari dissert. Academ. Ardor Stomachi Basiliæ, An. 1704. Sauvages Nosol. Meth. 2, 84.

* "Familiaris est illis qui cibos crudos, acescentes male digerunt, maxime eos in quibus extricatur oleum copiosum, ut castaneæ, quod oleum prava digestione empyreuma contrahit; familiare etiam malum ab usu piscium, carnium, quoties cum oleo, adipeve maxime rancidis frixæ fuerint in sartagine; item a liquoribus fermentatis." (Sauv. Nos. Meth. 2, 83.) Cheese eaten to excess has been known to produce a cardialgia that lasted for three years. (Paulini, de Nuce Moschata, sect. 3, p. 3; Eph. Nat. Cur. Dec. 2, Ann. 3, App. 71.) Cherry-stones, by remaining long in the stomach, have produced a similar effect. (Breal. Samml. 1725, 1, p. 77; Gronen. Commerc. Liter. Nov. 1733, p. 189.)

† "According to M. Peperes not less than two ounces and six drachms of acetous acid have been produced in the stomach by eight ounces of roasted chestnuts." (Good, Study of Med. 1, 121.)

Most of the writers upon this disease have suffered themselves to be misled by the aggravated symptoms of gastric disorder which commonly attend it; and have inferred, without just reason, that the seat of pain is the source of the secretion: and Dr. Burne was equally in error, in imagining that the salivary glands were disordered *per se*, instead of being affected by sympathy. I am satisfied that pyrosis is often a consequence of excessive activity of the salivary glands, without the stomach being in any degree disordered or disturbed, except by the abundant saliva which is swallowed; and that in the cases wherein unequivocal signs of dyspepsia forerun or accompany pyrosis, the fluid is rarely secreted by the stomach, but is for the most part a produce of the salivary glands, which are sympathetically excited to unusual activity.* If the secretion be not abundant enough to be spit out, or if the patient from motives of cleanliness and delicacy prefer to swallow rather than to evacuate his saliva, its accumulation in the stomach is at length productive of nausea and vomiting. The pain and uneasiness which immediately precede the vomiting are just the symptoms that invariably forerun an evacuation, by the stomach, of any matter which oppresses or disturbs it. The heartburn that sometimes prevails for an hour or more before the occurrence of actual sickness, is generally owing to some acrid or acid matter in the stomach, which in these cases prompts the salivary glands to an in-

* As I have before observed, the most satisfactory evidence in these cases is that of chemical analysis. The chemistry of the fluid of pyrosis has heretofore been little attended to, and perhaps to this cause is to be attributed the difference of opinion which has prevailed concerning the nature of the secretion. Indeed, I am not aware of any published analysis of it. Dr. West, however, tells us (Op. cit., p. 48,) that it has been repeatedly analysed, and that it nearly resembles the hydropic fluid of serous cavities! (p. 47.) I must do Dr. West the justice to suppose that he has never examined the fluid himself, and that he has never seen it analysed, and thus account for one of the most signal errors that ever affected the science of medicine or chemistry. In truth, there is no more resemblance between the fluid of pyrosis and that of dropsy, than between any other mucous and albuminous secretions.

Dr. Golding Bird has made some very ingenious observations upon the pyrotic fluid, in which he attempts to prove that it is not a produce of the salivary glands, but a genuine secretion from the stomach. In this inquiry, though conducting it with much chemical and medical skill, I think Dr. Bird has failed. In the specific gravities of the two secretions which he examined, there was nothing to warrant a belief in a difference of composition. He found the "gastric mucus" to be at one time as low as 1.0027, and the lowest sp. gr. of saliva which he observed was 1.0043: between these there is not a very considerable difference; and it lessens when we remember that the average specific gravity of the fluids of pyrosis and gastrorrhœa which Dr. Bird examined was 1.0097, and that of saliva 1.0081—the ratios being inversed. His lowest saliva was 1.0043, and the lowest pyrotic fluid 1.0058; the highest saliva was 1.0155, and the highest pyrotic fluid 1.0209. The difference in the specific gravities, therefore, is by no means sufficiently remarkable or constant to justify us in the inference that the fluid of pyrosis is not a salivary secretion—especially as the saliva of dyspepsia generally contains more mucus than the healthy secretion. Its retention in the stomach also, by favouring the absorption of its watery constituent, may contribute to its density. As regards the action of the pyrotic fluids upon test-paper, Dr. Bird observed out of fourteen examples, that it was alkaline in five, faintly alkaline in one, neutral in three, acid in three, and faintly acid in two. Of these, nine resemble saliva which is not diseased, and the remaining five do but correspond with one of its morbid varieties. Generally speaking, when acidity prevails in the stomach temporarily, that organ alone being disordered, the saliva will be increased in quantity and in alkalinity also. Though, as I have before observed, the salivary glands may be disordered independently of the stomach, and secrete an acid saliva, which, being swallowed, may prove a source of gastric uneasiness and derangement. In my own experience, however, I have found the fluid of pyrosis to be almost uniformly alkaline or neutral. Of nineteen specimens, the reaction was strongly alkaline in eleven, feebly alkaline in three, neutral in three, and acid in two. *In every case the state of the saliva corresponded with that of the ejected fluid.* It is difficult to conceive that the stomach, whose proper function consists in secreting an acid liquor upon which digestion in a great part depends, should at stated times of the day be evolving an alkaline or a neutral fluid, and then, having expelled it, return to its accustomed duty to answer the purposes of digestion and assimilation. For in many instances, the action of the stomach in pyrotic subjects is neither imperfect nor depraved after having discharged the fluid that oppressed it. I have often found that, after a morning vomiting, patients have shortly experienced a return of appetite, the gratification of which caused neither pain nor inconvenience of any kind.

Further: it does not appear from Dr. Golding Bird's application of reagents, that there was a more marked difference between

creased secretion of fluid that is often unusually alkaline. The alkali having sufficed to neutralise the acid, the saliva, if not digested, continues to irritate the stomach, and eructation or vomiting is the consequence. Often after the acid has been neutralised in the stomach the saliva will return to a neutral state, in which case, when the fluid is discharged by vomiting, it has simply a saline taste; at other times, the alkalinity of the saliva will more than suffice to neutralise the acid, when, of course, the ejected fluid will have an alkaline taste and reaction: again, the saliva will either be neutral from the commencement, or insufficiently alkaline, and then the vomited matter will be acid; or the saliva at first may have been acid, and itself the source of the acidity in the stomach: lastly, the stomach may be simply irritated, without any disorder of its secretions, inducing the discharge of an undue quantity of neutral saliva into it, in which case the fluid evacuated will be perfectly limpid and tasteless. I need scarcely observe that, owing to these very simple but overlooked circumstances, has arisen the amusing notion of acid, alkaline, and neutral indigestion.

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the fluid of pyrosis and saliva, than between the healthy and the simpler morbid varieties of saliva. In all the cases which Dr. Bird examined, chloride of iron gave either a deep or a pale orange tint. As I have before observed, saliva which contains a notable proportion of sulphocyanogen, will often not give the characteristic blood-red colour with a per-salt of iron, unless an alcoholic solution of the dried secretion be used. The obscurity is owing to a casual disturbance of the tint by the animal matter. This will in some degree account for the imperfect indications of sulphocyanogen, which Dr. Bird met with in the fluid of pyrosis: and it is worthy of remark, that the property which the sulphocyanide of potassium or sodium possesses of reddening per-salts of iron, is much diminished by the former being exposed to the digestive influence of the stomach. These two causes combined will sufficiently account for the sparing indications of sulphocyanogen which the fluid of pyrosis often furnishes. The existence of ptyalin, however, is the most satisfactory indication of the presence of saliva, from whatever situation the fluid may have been obtained. And I have rarely examined a specimen of pyrotic fluid without finding a sufficiency of this principle to convince me of the nature and origin of the secretion. The accompanying elegant analyses with which I have been favoured by my friend Dr. Percy, I think very clearly show the relation which holds between saliva and the matter of pyrosis.

First. 983.4 Water.
16.6 Solid matter, consisting of mucus, chloride of sodium, free soda, and a trace of the matter upon which depends the peculiar and characteristic odour of saliva.

Second. Sp. gr. between 1.005 and 1.010

374.50 *of liquid.*

Water	371.54
Ptyaline, a trace.	
Matter dissolved by alcohol	.49
Matter left after treating by ether and alcohol; mucus, with a trace of albumen	1.36
Saline matter; chlorides of potassium and sodium, with free alkali or carbonate	1.08
Loss	.03
	374.50

In the majority of dyspeptic cases, the salivary secretion is affected to diminution; but in every instance in which it is affected to much increase, if the fluid be swallowed and not digested (and in such cases it seldom can be), the invariable consequence of its accumulation in the stomach is its ultimate rejection, constituting one of the varieties of pyrosis. We see, then, that this secretion of watery fluid is not a disease but a symptom;—that it indicates an unusual activity of the salivary glands, which is merely sympathetic with a disturbed state of the digestive function. If, in these affections, the excess of saliva be spit out instead of being swallowed, there will seldom or never be any pyrosis—the dyspepsia may continue, but there will rarely be any vomiting of clear fluids. But if, as commonly happens in the increased salivary secretion of old people, the saliva be swallowed instead of being allowed to dribble from the mouth, the invariable consequence of its accumulation in the stomach will be pain and nausea, with ultimate vomiting, after the fashion of water-brash. The same occurs in long-fasting—the desire for food being urgent, the salivary secretion is correspondently increased, and the fluid is generally swallowed—at length, its augmentation in the stomach becomes a source of uneasiness; pain is felt, nausea supervenes, and if food be not taken, the saliva is discharged in the clear limpid state in which it was swallowed. In such cases the appetite is often not restored unless by sleep or by a stimulant, and the individuals are naturally enough said to have fasted until they are sick. This seldom happens with invalids, whose secretions are not active; or with people who, never feeling very strongly the sensation of hunger, are not troubled with the "mouth-watering" that waits upon an appetite. The value of a crust or a dram in preventing sickness during a walk before breakfast, is owing to the stimulus which is by either communicated to the stomach, whereby, in a short time, the secretion of fasting saliva becomes diminished; and upon

the same principle, or upon the fact of the saliva being spit out instead of swallowed, are we to account for the service of smoking or chewing tobacco in allaying hunger and nausea.

Not always however, in pyrotic affections, is the fluid vomited from the stomach. In many instances it proceeds directly from the salivary glands, out of the mouth, without being first swallowed. This chiefly happens in the distressing fits of nausea to which dyspeptics are sometimes subject; and the tickling sensation which they experience in the throat, together with the great quantity of fluid discharged, leads them to suppose that it rises up the gullet. It is surprising, in these attacks of nausea, what a quantity of saliva will be secreted. I have seen, in a fit of common sickness, half a pint of it run from the mouth in the course of ten minutes. In such cases, the sufferers are not troubled with the gnawing, binding pain at the pit of the stomach, which characterises the other variety of pyrosis. Except when the sickness prevails, they are for the most part easy and comfortable; they also bear food well, and in this respect, especially, are distinguished from the others; indeed, in many instances they suffer from nausea only when the stomach is empty, and are much relieved by a meal. This form of pyrosis is apt to occur in a morning before breakfast, and is often preceded by an uncontrollable gaping.* It is common to elderly people of irritable, nervous temperament; and to middle-aged people whose stomachs are sympathising with diseases or disorders in other organs, particularly in the uterus; but the usual symptoms of dyspepsia are seldom or never strongly marked in them, whilst in the other variety of pyrosis all the signs of indigestion are remarkably prominent. In the affection first described, the salivary glands are constantly in undue excitement from sympathy with a confirmed disorder of the digestive apparatus—the indigestion is well marked and permanent, and the saliva is being continually swallowed, until its accumulation in the stomach prompts that organ to expel it. In the present example, on the contrary, there are no prominent symptoms of dyspepsia; the stomach is subject to occasional attacks of irritability, either spontaneous or induced by disturbance in some other organ, and during the prevalence of this irritability and nausea the salivary glands are prodigiously excited, and pour their secretion in a stream from the mouth. The fit being over, no further uneasiness is felt in the stomach, and the saliva is reduced to its natural quantity.

There is another variety of pyrosis usually occurring in the middle and after periods of life, rarely in youth, in which the salivary glands are affected *per se*, the stomach and other organs remaining healthy both in their structure and function. This affection is just a casual salivation; the saliva is neither diseased nor secreted in sufficient quantity to be spit out, so that the patient is continually harassed by moisture in his mouth, which he relieves by constantly swallowing. If the digestive powers of the stomach be good, and the salivary secretion do not shortly subside, it may continue without producing any marked effect for several weeks; finally, however, the stomach is nauseated and disturbed, and vomitings of saliva occur in the periods of fasting. Sometimes, after the salivary discharge has continued to the production of dyspepsia, the ptyalism will decline, and with it the gastric disorder, and the patient becomes quite well again. At other times, the ptyalism will persist with the indigestion, and subside as the latter becomes relieved; and, again, the salivation will suddenly cease, and return as the indigestion is remedied. In this way I have seen the patient tortured, and the physician annoyed, for months in succession.

This affection often arises without any obvious cause, and disappears in the same way. In these instances it is a purely spontaneous excitement of the salivary glands, and is not uncommon in hysterical females, and in persons of high nervous sensibility. Often it is a consequence of uterine disorder or of pregnancy, but is never accompanied with disturbance of the digestive apparatus.

Another form of pyrosis is that in which after pain, heat, and acidity in the stomach, vomiting usually occurs; but the ejected matter has neither the composition nor the appearance of saliva, and consists, for the most part, of gastric mucus, with sometimes an acid bile, or alimentary matter. Occasionally, the mucus will be tolerably clear and plentiful, but even in its purest form it is sufficiently distinct from the fluid discharged when the salivary glands are implicated in the disorder. I have mentioned this variety *en passant*, but it concerns us only to investigate the others, upon the treatment of which it is necessary to offer a few remarks; and, perhaps, these will be best conveyed through the medium of cases.

Case 1.—Mr. J., ætat. 64, of active, industrious habits, complained to me of having suffered for a month previously from pain in his stomach, with flatulence, nausea, headach, constipation, and other symptoms of dyspepsia. These, he said, had continued for about three weeks, when he began to feel an unusual moisture in his mouth, and was obliged to be constantly swallowing his

* —— "break their fast with gaping, which they find to be very good, and do spit the better for it."—*Rabelais.*

—— "that early gaping
Which maketh one's mouth to water."
Overchamp's Dreamer.

saliva. It was chiefly distressing to him before breakfast, and in the evening, when, on account of business, his tea-time was generally delayed. If he took a little food, or a glass of wine, the flow of saliva would be in some degree diminished, but if he did not use this precaution, he felt, in a short time, a distressing uneasiness in his stomach, and a remarkable sense of fulness; soon, a fit of vomiting occurred, without difficulty, and a quantity of clear, ropy fluid would be discharged, the proportion varying according to circumstances. The abundant saliva continued after a meal, as before it, but rarely when the stomach was full did vomiting ensue, though the pain and nausea were very severe.

When I saw him he had an anxious, sallow, dyspeptic look; tongue pale, flabby, and furred; saliva alkaline; appetite capricious; bowels costive; pulse 64, and feeble.

In this case it was sufficiently evident that the salivary apparatus and its secretion were affected by the disordered condition of the stomach and bowels. The patient was ordered bitter infusions, aloetic purgatives, and occasionally a gentle mercurial. Under this plan of treatment the dyspeptic symptoms soon began to disappear, the saliva was reduced to its natural quantity, after which there was no return of sickness or vomiting.

Case 2.—Mary H., ætat. 27, a patient under my care at the dispensary, was the subject of dyspepsia attended with occasional vomiting of a clear fluid, like water. The latter symptom had prevailed for only a week prior to the time when I saw her; but the pain in her stomach, nausea, bad appetite, headach, and general feeling of indisposition she had suffered from for nearly two months. She informed me that, when first affected, her mouth was unusually dry, and that she had almost entirely lost her natural taste. In the intervals of eating she was often obliged to rinse her mouth with water to be able to articulate, and during the taking of food she had frequently to sip a diluent to enable her to swallow. In this state she continued for about six weeks, when she was suddenly seized with an aching sensation in the neighbourhood of the parotid and submaxillary glands; her mouth became unusually moist, and she had a strong metallic taste. Up to this time she had taken no medicine of any kind. The flow of saliva, she observed, was so great, that she had continually to be swallowing it. Though her general symptoms of dyspepsia did not subside, she often felt strongly the sensation of hunger, at which time the flow of saliva was excessive. If she resisted the temptation to eat, which she was frequently obliged to do, owing to her occupation, she shortly began to feel sick, and to suffer from weight and pain at the pit of the stomach. The sickness invariably terminated in the vomiting of a clear fluid that had neither taste nor smell. She was always relieved by the vomiting, but unless she took food afterwards, the flow of saliva continued, and sickness again returned in the space of an hour. This would regularly recur until the stomach was excited by a meal. The saliva was even then not always diminished, but the swallowing of it did not usually produce sickness or pain.

At the time I first saw her she had an anxious, emaciated appearance; eyes sunken and dull; complexion sallow; tongue large, soft, and coated with a thick, white fur; saliva neutral; pulse 82, and feeble; bowels irregular; menstruation natural. I felt persuaded, from the nature of the symptoms, that a disturbed state of the stomach and bowels was the sole cause of the excitement of the salivary glands. She was therefore ordered a light vegetable tonic, with carbonate of soda, and an occasional mercurial with compound colocynth pill. Under this treatment she soon improved in appearance, and lost for the most part her dyspeptic symptoms. Still, the flow of saliva continued, and invariably produced sickness if her stomach were long empty. She was then ordered infusion of cascarilla with ammoniated tincture of valerian. This speedily relieved the coldness, oppression, and sinking at the cardia, of which she had previously complained; and never, after the subsidence of those symptoms, was her saliva more abundant than natural. She had no return of the sickness, and was dismissed convalescent.

A diminished secretion of saliva prior to an increase of it, is a curious but not an uncommon occurrence. I have many times noticed it. Its analogy is often met with in the kidneys.

(To be continued.)

FUNCTION OF THE SPLEEN.

To the Editor of The Lancet.

Sir,—As some of the principal reasons which have induced me to regard the spleen as an assistant circulatory organ, and the placenta as a temporary spleen, are not contained in the *Extracts* from my essay on the "Nature and Causes of Epilepsy," &c., which appeared in a recent number of your excellent Journal, you would confer an additional obligation upon me by inserting the following abstract, which may in some measure serve to repair that deficiency. I have the honour to be, Sir, your most obedient servant,

John Jackson.

10, Red Lion-square, London,
July 17, 1842.

All the blood supplied to the stomach, intestines, spleen, pancreas, and gall-bladder,

has to pass through the liver previously to re-entering the heart. The union of the veins returning the blood from those organs forms the portal vein, which divides and subdivides like an artery in the substance of the liver. The terminal branches of the portal vein are the portal plexuses; they are the capillaries of the liver. The radicles of the hepatic veins communicate with the portal plexuses; and the hepatic veins themselves terminate at the upper and back part of the liver in the inferior cava, just before that venous trunk penetrates the diaphragm to enter the heart. The arteries which supply the stomach, intestines, spleen, pancreas, and gall-bladder, divide and subdivide, and ultimately terminate in capillaries. The veins which originate from those capillaries unite and reunite, and ultimately terminate in the portal vein. Here, in the portal vein, the blood which has passed through one system of capillaries is diluted with the fluids which have been taken into the stomach; all of which fluids enter the portal vein by the splenic vein; they enter the splenic vein by the gastric and duodenal veins. This *diluted venous blood* has then to be propelled through the divisions and subdivisions of the portal vein; through the portal plexuses, which, it must be borne in mind, are the *second* capillary system; and, lastly, through the hepatic veins, into the heart. The question is, What is the organ, or power, by which the propulsion of this diluted venous blood is effected? Harvey supposed, and all subsequent physiologists appear to have taken it for granted, that it is the *vis à tergo* of the left ventricle; that the *heart* is the only *organ* concerned in giving motion to the blood. Müller (see Baly's Trans., p. 234,) states, "that in all the vertebrate animals, the *vis à tergo* of the heart's action is sufficient to propel the blood through the liver, after it has already circulated through the capillaries of the other abdominal viscera." Dr. Marshall Hall, too, has words to the same effect. He says (Gulstonian Lectures for 1842, p. 17,) "The power of this mighty vital organ extends to the most remote parts of the circulatory system, to the ultimate divisions of the arteries, beyond these to the capillary vessels, and beyond these even to the veins! nay, in the case of the hepatic circulation, beyond the veins, to a second series of capillaries, and through and beyond these to the hepatic vein and vena cava! The latter part of this proposition is not demonstrable; but the former is capable of the most indubitable demonstration which light can present to the eye." The latter part of this proposition, to use Dr. Hall's own words, is certainly not demonstrable; but the reverse of it is. There is sufficient evidence to prove that the power of the "mighty vital organ" has been over-rated; that it is inadequate to the portal circulation; that the heart is not the organ which propels blood through the liver either after birth or before; and further, that after birth such propulsion is effected by, and is the express office of, THE SPLEEN; and before birth, of the PLACENTA, which, in the human subject, is simply a *temporary spleen*.

The following comparison between the circulation through the inferior extremities, and that through the digestive organs, shows at one view the difficulties which the *vis à tergo* would have to contend against, if the left ventricle were the agent in propelling the portal blood through the liver into the right auricle:—

Circulation through the Inferior Extremities.	*Circulation through the Digestive Organs.*
1. Arteries straight, anastomoses infrequent; *vis à tergo*, therefore, undergoes the least possible diminution in the arteries.	1. Arteries tortuous, or arranged in arches; anastomoses large and frequent; *vis à tergo* consequently much weakened in the arteries.
2. Blood propelled through only one system of capillaries and one of veins before it re-enters the heart.	2. Blood, after having been propelled through one system of capillaries and one of veins, has to be propelled through a second system of capillaries and a second of veins before it enters the heart. *
3. No more blood returned to the heart by the veins than is supplied by the arteries.	3. *Much more diluted venous blood returned to the heart by the hepatic veins, than there is arterial blood supplied to the digestive organs by the cœliac and mesenteric arteries.*
4. Ascent of venous blood greatly assisted by muscular contractions, and descent prevented by valves.	4. Ascent of venous blood not favoured by contractions, and descent not prevented by valves, either in the first or second system of vessels.

* The portal vein is equivalent to, and, indeed, serves the office of, an *artery*; although it has the structure of a *vein*, and contains diluted venous blood. It would not, therefore, be very incorrect to say, through a second system of arteries, a second of capillaries, and a second of veins, &c. The portal system of vessels is, in fact, a complete and distinct system, engrafted, as it were, upon the general system.

Reasons for attributing to the spleen the office of propelling the portal blood through the liver into the heart.

1. Because the spleen is placed at the very commencement of the second, or portal system of vessels, and is connected by means of its vein with the origin of the portal trunk. It also possesses highly elastic and contractile properties; and therefore by position, vascular connection, and properties, is well adapted for propelling the portal blood through the portal vein, portal plexuses, and hepatic veins. *

2. Because the spleen is comparatively much larger in man than in the quadruped. In man its average weight is one-sixth that of the liver; in the hog only one-twelfth. The reason why it is proportionably so much larger in the former is, that in man the usual attitude of the trunk is erect,—in the quadruped, horizontal; and a much greater power, or larger spleen, is necessarily required for the propulsion of blood through a system of vessels the direction of which is vertical, than through one the direction of which is horizontal. In certain quadrupeds, as the giraffe, the direction of the portal vessels is neither vertical nor horizontal, but between the two; and the spleen of the giraffe, I am informed, is much larger proportionably than the spleen of the horse or ox.

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* The *elasticity* of the spleen depends chiefly upon its capsule, and upon the prolongations which proceed from the capsule through the interior of the organ; and it is probably by this elasticity that any undue distention of the organ is prevented. The *vital contractility* of the spleen is proved by the organ varying considerably in size at different times in the same animal; and, as the spleen is composed chiefly of the radicles of the splenic vein, to those radicles we must accord this property of vital contractility—without, however, asserting its non-existence in the capsule and prolongations. But the splenic vein, and portal trunk and branches, as well as the radicles of the splenic vein, splenic plexus, or spleen, possess, and in an eminent degree, the property of vital contractility, as is proved by their being surrounded by a loose cellular membrane, the capsule of Glisson, which is manifestly a provision enabling them to contain, and accommodate themselves to, a varying quantity of blood. Now, if the splenic vein and portal trunk and branches did *not* possess the property of vital contractility, they never could contain a varying quantity of blood, but would always be in a state of distention; and then, not only would Glisson's capsule be useless, and the branches of the portal vein might have resembled the hepatic veins in being simple canals, but the spleen would be totally incapacitated from acting as an assistant circulatory organ.

The fact *that the greater or less size of the spleen accords with the more or less vertical direction of the portal vessels*, is obviously irreconcilable with Müller's opinion that its office is sanguification. It seems, indeed, to justify the inference, that its use is simply and solely mechanical. That the spleen is not a secreting organ, is evident from its not possessing any excretory duct. The foregoing reasons appear to me sufficient to show, first, that the heart is not duly adequate to the portal circulation, and, consequently, that an assistant circulatory organ is required; secondly, that the spleen is in every way perfectly well adapted to be the agent in the propulsion of the portal blood; and, thirdly, that such is its actual and only use.

Having thus shown that it is not the heart but the SPLEEN which propels the blood through the liver *after* birth, it now remains to be proved that it is not the fœtal heart but the FLACENTA which propels blood through the liver *before* birth.

It is evident, if the blood has not the power of locomotion, that its propulsion through the fœtal liver must be effected by one of three organs, viz., the maternal heart, the fœtal heart, or the placenta.

That it is not by the maternal heart is proved by the impossibility of injecting the fœtal portion of the placenta from the uterine arteries. The notion commonly entertained is, that it is effected by the *vis à tergo* from the fœtal heart, i. e., that the fœtal ventricles propel the blood through the umbilical arteries, and their capillaries through the radicles of the umbilical vein; in other words, the placental plexus, or fœtal portion of the placenta, through the umbilical vein and its branches in the fœtal liver; and, lastly, through the portal plexuses and hepatic veins into the fœtal auricles. The improbability of this being really the case is manifest,—is more glaring even than the improbability of the left ventricle after birth being the agent by which the portal blood is propelled through the liver into the right auricle.

The first argument to be adduced in opposition to this notion is, that more blood is conveyed by the umbilical vein from the placenta to the fœtus than is returned from the fœtus to the placenta by the umbilical arteries; so that there is precisely the same difficulty in the way of, and objection to, the *vis à tergo* of the fœtal ventricles propelling the blood through the liver into the fœtal auricles, as there is to the *vis à tergo* of the left ventricle after birth propelling the portal blood through the liver into the right auricle. The portal plexuses are in each instance the *second* capillary system, and through this second system more blood is propelled than has been propelled through the first. The *vis à tergo* necessarily becomes much weakened, if not altogether

spent, by passing through the first system of capillaries; and I am at a loss to imagine what reason there can possibly be for supposing that this weakened force *can* propel the blood through the second system of capillaries and veins. When we reflect upon the length and tortuosity of the umbilical arteries, the most we ought to expect of the fœtal ventricles is, that they propel blood through the capillary terminations of those arteries into the placenta; but to suppose that they, the *fœtal ventricles*, do *more* than this, that they propel back to the fœtus along with that blood an additional quantity through a vein two or three feet in length, and remarkable for its tortuosity, and after all through a second extensive capillary system, the portal plexuses, into the fœtal auricles, is, indeed, the very acme of physiological absurdity.

Two other remarks may be made in opposition to this same notion; first, that before the fœtal heart can propel blood it must receive it; and, secondly, that blood does some how or other get propelled through the fœtal liver when there is no fœtal heart, as is proved by the acardiac fœtuses.

To conclude:—As the spleen is the organ by which the blood is propelled through the liver into the heart after birth, so the placenta is simply a temporary spleen by which the blood is propelled through the liver into the heart before birth. In both instances the blood so propelled is a thin or diluted venous blood. That propelled by the spleen is diluted in the splenic and portal veins; and that propelled by the placenta, by having, previous to arriving at this organ, left a part of its solid constituents in the parietes of the uterus.

ON LARYNGISMUS STRIDULUS.

By George A. Rees, Esq., Surgeon, London.

Having already published a letter in The Lancet on laryngismus stridulus, I hope I shall not be accused of presumption in offering some remarks in reply to Dr. Marshall Hall's communication on that affection, or what he terms stridulous convulsion, in The Lancet for June 9, especially as in my former paper I put forth, and still entertain, what Dr. Hall considers erroneous views of the disease. If further apology be necessary for venturing to differ from so eminent a physiologist, one to whose discoveries I find myself more indebted each day I am in practice, the ample opportunities I have had of observing and studying the malady, must plead my excuse.

The interest I have always felt in the study of the complaint has been painfully increased during the past year, from its occurrence in an infant of my own, and that in so severe a form as to cause daily apprehension of a fatal termination, though he is now happily recovered, and not a vestige of the attack remains.

A short description of his symptoms will serve as an introduction to my intended remarks, and this may be given in the form of a case, though anxiety at the time prevented anything like regular note-taking.

H. R., born healthy, had severe diarrhœa during the first fortnight, from which he recovered, and continued well until the age of five months; at this time he was of a fair average size, plump, firm to the touch, and healthy in appearance. He was now short-coated, and after a few days the nurse complained of his legs being constantly drawn up. On inspection this was found to be the case; they were constantly flexed upon the abdomen, as in cases of abdominal inflammation. This contraction was without rigidity: the legs could be easily straightened, but gradually, on being left to themselves, resumed their bent position. There was at this time no other evidence of disease; the appetite was good, tongue clean, bowels regular, and the infant cheerful. Supposing the position of the legs might be the effects of cold from change of clothing, I ordered long woollen stockings and flannel next the skin.

After a few days the nurse perceived, early in the morning, the hands and feet slightly contracted, the contraction affecting all the fingers and toes (the carpo-pedal contractions), but lasting only an hour or two, disappearing as the day advanced; at the same time I observed a catch or crow in the inspiration, when the infant awoke in the night, or was disturbed; but this catch was so sudden that it did not interfere with respiration. Together with these symptoms the bowels became confined and disobedient to the action of medicines, the constipation resulting more, apparently, from undue action of the sphincter muscles than from any torpor of the intestinal tube. On inspecting the mouth, the lower incisor teeth were seen just protruding through the gums; they were lanced, and came through in two days. There was not the least appearance of any other teeth advancing, the gums being firm, pallid, uninflamed, not even the mark of a tooth perceptible.

This state of things continued eight or ten days, when the crowing inspiration became much more distinct; the occasional narrowing of the glottis so considerable, as to cause severe dyspnœa; the carpo-pedal contractions more permanent, lasting for days together; the bowels more confined, and the motions often entirely devoid of bile. To these symptoms supervened in a day or two severe convulsions, produced by the inability to breathe; at first these occurred once, at an interval of two or three days, but became more numerous as the disease progressed.

The treatment, suggested by medical friends, consisted in the application of two leeches to the head, the administration of one grain of calomel every other night, and small doses of assafœtida daily, with the application of cold to the head: the constipation of the bowels was remedied by occasional doses of castor-oil. I was induced also, against the dictates of my own judgment, to lance the gums over the upper incisors *once*, though not a sign of approaching teeth, nor of any local congestion, was apparent.

These measures, and others which it would be taking up too much space to recount, were tried for a month, and failed to afford any relief; the attacks of dyspnœa became more frequent and more violent; the convulsions more numerous and more severe, not a day passing without one, sometimes two; the patient's strength rapidly declining; and it was determined to try immediate change of air, though the state of the infant forbade any distant removal. He was taken to Peckham Rye; at first the change seemed to promise little benefit, being followed by increased weakness, especially after the fits. On the third day after his journey the exhaustion was so great subsequently to a convulsion, that the nurse considered the infant dying, and in my absence a very intelligent medical practitioner in that neighbourhood, Mr. Stokoe (to whom I am happy to avail myself of this opportunity of returning my sincere thanks) was called in. He agreed with me in thinking little medicine should be given, and more reliance placed upon the beneficial effects of change of air; he also recommended the trial of asses' milk. The gums over the upper incisors were again lanced. From that time the infant gradually improved; the fits were less frequent; the hands and feet in a week or eight days became relaxed; the crowing became less distinct each hour; as the patient improved in strength the bowels resumed their regular action; and in a month from the time of removal he was brought home perfectly well, and has so continued to the present time. The upper incisors are not yet come through, the gums are now swelled over them, and there is a prospect of their early eruption; but as the infant continued well, I have not till now thought it necessary to lance them.

This case presents an example of laryngismus stridulus which contrasts well with the one described in my former communication.* In both cases the paroxysms of dyspnœa were very similar, but other symptoms unlike; and I believe the *predisposing* cause in both the same—the *exciting* cause totally different. In the case formerly published the attacks proceeding from enlarged thymus, in the one just recited the result of nervous irritation alone.

* See LANCET, No. 925.

The remarks I have to offer will regard chiefly the causes of laryngismus stridulus; in the greater part of the excellent plan of treatment laid down by Dr. Hall, I think every one of his readers will concur; but there is one point on which I beg to differ from that gentleman, namely, the recommendation to lance the gums when no sign of inflammation is present, nor evidence of approaching teeth. I must enter most respectfully my protest against what I consider unreasonable treatment; and I confess my sorrow that a practice, which I believe is at present carried too far, should have the sanction of such a name as Marshall Hall's. I cannot believe that lancing the gums, not over isolated teeth, but along the whole extent; not once or twice, but twice a day; until the repetition of the incision produces ulceration, can be necessary or justifiable, on the supposition of affording relief to a state of sub-inflammation, the existence of which can only be surmised, since none of the signs of inflammation, neither heat, redness, nor swelling are present. Dr. Hall states that his case may be regarded as presenting "a fair test and criterion of the efficacy of the remedial measures adopted;" but if any reliance can be placed upon the event of a single case, I would point to the one recited above, to show that Dr. Hall's patient might have done equally well under his excellent general treatment without such severe scarification of the gums.

With regard to the cause of laryngismus stridulus, there can be little doubt of the correctness of Dr. Hall's statement, that the predisposing cause, the disposition to this disease, consists in a peculiar susceptibility of the excito-motor property of the nervous system; and I believe in many cases the complaint is excited in subjects so disposed by those sources of irritation and excitement which Dr. Hall has recounted—dentition, indigestible food, &c., where no organic change, either in the thymus gland or other structure is present; but I feel equally convinced, in other cases the affection is the result of organic change, just as epilepsy may be present from temporary functional derangement at one time, and at another may be a symptom of morbid changes in the brain or its investing membranes.

My experience leads me to state that either of the following changes of structure, *enlargement of the cervical glands, hypertrophy of the thymus gland, deformity of the chest from disease of the lungs*, may give rise to laryngismus stridulus; and perhaps to these should be added inflammation of the brain: but I cannot decide whether this may be the cause, or whether where it is present it is an effect of the malady. The diffidence I feel in giving an opinion in opposition to Dr. Hall would be greater than it is if, in naming these lesions as causes of laryngismus stridulus, I merely expressed my own

notions on the subject; but I am adding concurrent testimony to statements made by other and abler members of the profession.

Enlargement of the cervical glands was considered a cause of laryngismus stridulus by the late Dr. Hugh Ley, who supposed that the paroxysms of choking were excited by the pressure of the deeper glands exerted on the recurrent nerves; and in his work (the best on the disease in our language) he has published plates, showing the post-mortem appearances in some fatal cases which he dissected, in which the recurrent nerves were so imbedded in these morbid glands, that it appears impossible they should have performed their functions without obstruction. He also quotes a case cited by Dr. Rush, of a man who suffered from similar paroxysms, one of which proved fatal, in whom after death a small tumour was found in the neck, pressing on the recurrent nerve. I have opened children who have died of this malady, in whom the chief morbid appearance was enlargement of the deep cervical and bronchial glands, and I attributed to them the disease.

Hypertrophy of the Thymus Gland.—That this is a frequent cause of the disease was stated by Dr. Kopp, and his statement is so commonly believed among the Germans, that the affection goes by the name of thymic asthma; but Dr. Hall considers this hypertrophy as the *effect*, not the *cause*, of the convulsive efforts of the malady, and adds, "If we carry our views to the congestion of the brain, and bear in mind the effect of the convulsive effort *on the thymus gland and face*, we shall see the great importance of adopting measures which may relieve the congested encephalon." Dr. Hall then mentions that he has seen the thyroid gland become and remain enlarged "in like manner after the efforts of severe and protracted parturition." Now that the thyroid gland or body, since it bears not the most distant resemblance to a gland, a highly vascular organ, supplied by two ample arteries from the main branches ascending to the head, a body so liable to participate in any general plethora of the system, that in some females it enlarges at each catamenial period. That such a body should, from the violent straining efforts of labour, become and remain enlarged, I can readily believe, but cannot allow any analogy to be instituted between such a state and hypertrophy of the thymus gland. No parity of reasoning can be applied to two structures so entirely different: the thymus is, to all intents and purposes, a conglomerate gland; for Dr. Hall's argument to have any weight, it would be necessary for him to adduce instances where the parotid or submaxillary glands had become enlarged from any temporary excitement or cerebral congestion. Moreover, it is impossible for the thymus gland to sympathise very intimately with congestion of the face or head, inasmuch as the supply of blood is derived from a totally different source. The thymus is almost wholly supplied from the internal mammary; in some cases a very small branch comes from the superior thyroid, but this is as often wanting. For these reasons I must still believe that enlargement of the thymus cannot be the effect of laryngismus stridulus, but that where the predisposition to the complaint exists in the nervous system, hypertrophy of that gland may and does cause the affection.

That the disease, if dependent upon change of structure, must be irremediable, is another point on which I must join issue with Dr. Hall. If we consider the probable physiology of the thymus, if it be the grand manufactory of chyle during the later months of fœtal and the earlier months of infant existence, I think it will not be difficult to trace to a cause the abnormal enlargement of the gland, while we are directed to a plan of treatment likely to prove successful in removing it. May it not be dependent upon some error in the process of assimilation carried on in the digestive tube after birth? If chylification go on properly in the intestines, the gland is no longer required, and therefore becomes gradually absorbed; but if that process fail it remains, and its unnatural action causes it to enlarge. In this way the beneficial effects of change of air, warm clothing, well-regulated diet, &c., may be explained.

Deformity of the Chest from Disease of the Lungs.—Mr. Snow was the first who mentioned that in the deformity of the chest mentioned by me as dependent upon disease of the lungs (which deformity is accompanied with alteration of the movements of the ribs in respiration), laryngismus stridulus is present, though Mr. Snow considered the sudden stop in the inspiration as voluntary.* Since I first published an account of that deformity, I have seen numerous cases which convinced me that it is often the cause of laryngismus stridulus, and that many of the infants so deformed are cut off by one of the paroxysms of dyspnœa.

Artillery-place, City-road,
July 16, 1842.

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* See LANCET, No. 916. Mr. Snow was the first also to point out that in these children the abdomen is always enlarged, a fact I ought to have noticed when I wrote on the deformity, though I am persuaded, that gentleman was in error in attributing the altered form of the chest to enlargement of the abdomen: the latter enlarges because, from the abnormal movement of the ribs, the abdominal muscles lose their fixed point of action.

CROWING RESPIRATION.

To the Editor of THE LANCET.

SIR,—It has long been my conviction that too sombre views of the disease called "laryngismus stridulus" have been impressed on the profession by the very able and learned work of the late Dr. Hugh Ley. The following case illustrates my meaning. It was, therefore, with peculiar pleasure that I read in THE LANCET, No. 15, and dated July 9, 1842, the very seasonable communication of Dr. Marshall Hall; not that that gentleman has displayed so much originality in his explanation of "the most obvious sources of irritation and excitement" of the nervous system, as well as of the corresponding therapeutical indications, as it is his merit to have insisted on causes adequate to the solution of the morbid phenomena *in a large class of curable instances of the disease*, and to have traced with a masterly hand the appropriate means of relief.

The frequent relation of the disease to dentition was long ago noticed by Dr. Burns, who recommends "the gums to be early cut." Even the *sub*-inflammation connected with dentition, on which Dr. Marshall Hall's recommendation of free and frequent scarification rests, is a doctrine recognised alike by M. Billard and Dr. Hugh Ley. Mr. C. Turner Thackray, too, has dwelt on the contrasted influences of pure and impure air. "A child subject to spasm of the glottis," says he, "will have alarming convulsions when it breathes the air of a confined apartment in a large town. The convulsions cease when it is removed into the country, recur when brought home, and are again removed by a purer atmosphere." But though all the causes assigned by Dr. Marshall Hall have been insisted on singly rather than in combination by others, he has grouped them so philosophically, and pursued the practical indications with such clear-sighted consistency, as to have conferred, by his late "Remarks on the Nature and Treatment of Stridulous Convulsion in Infants," a valuable boon on the profession.

Dr. Marshall Hall's "very few remarks on the *pathology* of this affection" regard "the condition of the brain" as certainly congested in those cases, which admit of relief by the spirit-lotion or the ice-cap. His entire silence respecting the theory of Dr. Hugh Ley, which alleges that "the respiratory nerves, *i. the entire exclusion of all morbid condition within the cranium*, MAY BE at fault," is doubtless compatible with his belief in its application to many of the graver and fatal examples of the malady. But I now hasten to describe the case before alluded to, as showing the operation of Dr. Hugh Ley's views on the mind of a most intelligent man, and as evincing at the same time the value of a little common sense in not yielding to the hopelessness inspired by an extreme hypothesis, which, however true in its application to some cases, fails when it is too sweepingly applied.

The child of a physician in London was under Dr. Hugh Ley's care during a protracted attack of this disorder. The father had previously lost another child from the same complaint. This circumstance, coupled with a thorough persuasion of the truth of Dr. H. Ley's theory, that in the vast majority of cases the par vagum, or its recurrent branches, are in fault, owing to enlargement and pressure of the bronchial or cervical glands, led him to despair of his child's recovery. In several conversations which, as his friend, I had held with him, he stated his perfect conviction of the fact of glandular enlargement, and consequent nervous loss of function in the larynx, as the cause of the paroxysm. It was in vain that I told him I thought there was enough in the disordered digestion of a child reared by the spoon, and probably subjected to the additional irritation of dentition, as well as to the pernicious influence of impure air, to account for the paroxysms; at the same time that I by no means denied the possibility of structural affection of the bronchial and even mesenteric glands. It seemed to me also a clearly chalked out line of practice, in such a case to ascertain the effects of the adoption of the obvious remedies suggested by these facts, namely, a wet-nurse, scarification of the gums, and removal into the country. At all events, I thought this course preferable to remaining in town, and persevering in the use of iodine under such unfavourable circumstances. My friend, however, was not to be moved from his present plans, though no relief, after a long trial, had followed their employment, and though he frankly confessed he anticipated no advantage from continuing them, but wholly despaired of his child's recovery. Being at that time a resident in London, I was one day dining with this gentleman and his lady, when the nursery-bell gave us a sudden and loud alarm. The child, which had become extremely emaciated, had had seven fits that day. The parents rushed up stairs—I followed. On my reaching the nursery, I found the mother on the floor in a swoon, from agony of mind. The father's solicitude was divided between his wife and child, the latter of whom was in the worst paroxysm which had yet been witnessed. It was more severe, continued much longer than usual, and after a few minutes terminated in complete asphyxia. Under these appalling circumstances I set about inflating its lungs, by pressing the larynx down on the œsophagus with one hand, closing its mouth with the other, and applying my lips to its nostrils. After a short time the child's respiratory organs responded to each act of inflation, and by persevering in the process a considerable time,

respiration was completely restored. For many hours, however, the child remained feeble, and uttered a plaintive moan, which was connected with each respiratory effort. The mother, overpowered by gratitude, now listened to my suggestions. The child was sent the next morning into the country, a wet-nurse was procured, and convalescence was speedily established. About five years have since elapsed, and my little patient is at this day a fine, sprightly, and healthy child. I am, Sir, your obedient servant,

HUMPHRY SANDWITH.

Albion-street, Hull,
July 26, 1842.

P.S.—When this case occurred, though I was aware of Dr. Hugh Ley's theory of laryngismus stridulus, I had not then read his book. I was afterwards agreeably surprised on reading it, to find allusion made to a parallel case recorded by Dr. Johnson, of Dublin (Dublin Hospital Reports, vol. v., p. 619), who "had seen a child in a state of asphyxia caused by this disease, recovered from apparent death by the instantaneous application of artificial respiration."

CLARKE'S APPARATUS FOR INJURIES OF THE LEG.

To the Editor of THE LANCET.

SIR,—The following is an imperfect description of an improved apparatus now made for fractures, and other injuries of the lower extremity, by Mr. F. Clarke, splint-maker, Liverpool, who has laboured long to bring it to its present condition. I am, Sir, yours very respectfully,

J. NOTTINGHAM.

Liverpool, July 27, 1842.

In this splint, the middle part resembling that in Mr. Liston's apparatus is somewhat modified. It has no screw under the junction of the leg and thigh-pieces, each of which, instead of being kept along with the other at any particular angle by such screw, is supported on a forked iron rod, attached to it by a hinged joint underneath; its other extremity being so arranged as to slide on an horizontal groove, formed on each side of the support, or frame of the splint, which rests on the bed. This sliding motion is arrested at any point along the frame by a screw, which is attached to the foot of either support, and so the splint rendered firm in any position upon its frame.

The sides of the frame are covered with plates of brass, which facilitate the motions required, and at the fore part, corresponding to the situation of the foot, the splint and frame are so articulated, as to prevent any lateral deviation of the former from the latter; but this juncture can be separated if necessary, and the whole length of the conjoined portions of the splint raised to any convenient angle with the frame, thus allowing the limb to be placed in that position which is frequently adopted for the treatment of fractured patella; or the conjoined portions may be laid flat upon the frame, so as to afford a perfect apparatus for the treatment of fracture in the extended position.

An additional thigh-piece slides under the upper or posterior portion of the instrument, and may be drawn out so as to lengthen it, and then fixed by the accompanying screw. To this extremity also additional lateral pieces are adapted, external and internal, and each fixed, as circumstances may require, by two screws. These will occasionally be wanted during the treatment in the straight position; the outside one to pass beyond the crista of the ilium, the other to go towards the upper and inner part of the thigh.

The footboard may be gently drawn downwards, or pushed upwards, by the screw attached to it, which is seen projecting from the extremity of the instrument; by this means the position of the foot may be regulated, and any requisite extension easily and securely obtained.

The fundamental part of the contrivance for protecting the heel is the same as in Mr. Liston's splint, but the leather sock belonging to it affords an additional facility for raising the foot from the iron part of the apparatus, and thus, as it were, slinging it more safely.

The rectangular frame of wood, without being heavy, is of such shape and extent as to rest securely on the bed, and its steadiness is further increased by a transverse bar of iron at either end, which folds up when not wanted, so as to take nothing from the portability of the instrument, allowing it to be packed in a case of moderate size.

There is a long pad or pillow for the splint, a body-girth, and strap for the groin, which complete the appendages required. The advantages which this apparatus possesses over others previously employed are so obvious, as to require but little notice at present. It serves at once the purposes of a double-inclined plane and of a straight splint. It admits of being employed for raising and supporting the leg and thigh in the treatment of fractured patella. It combines the advantages of several apparatus of different sizes. It affords a more complete protection to the heel than any splint hitherto employed. It supplies a means of producing extension in cases of fracture where this may be required in a most safe and gradual manner, and withal has less the aspect of a complicated apparatus than many contrivances hitherto in use.

PERFORATION OF THE STOMACH.

To the Editor of THE LANCET.

SIR,—I am induced to forward the enclosed most interesting case, from the importance of the subject rendering the recording of simple facts more valuable than the most elaborate description of disease. *Oculis subjecta fidelis.* I am, Sir, your obedient servant,

G. FRIEND WHITELEY.

Ramsgate, July 23, 1842.

At eleven o'clock, p.m., July 14th, M. B., a lady's-maid, aged 26, of interesting and prepossessing appearance, with pale complexion, was seized whilst ascending the stairs with what she described as a spasm, referrible to the stomach. She had been subject to occasional pain in that viscus, as also in both hypochondria, but was always soon relieved by medical treatment. I saw her immediately after the attack, and found her on the floor suffering agonising pains in the whole abdomen. They seemed to originate from the scrobiculis cordis, and extended to the hypochondrium and back. She had taken tea at five o'clock, apparently in good spirits, and without any disposition to vomit or feeling of uneasiness. Her countenance now was exceedingly anxious; pulse not much hurried; great dread of taking a deep inspiration; tongue clean; skin natural; the bowels had been inactive for two days. Ordered—

Castor-oil, ℥ss;
Tincture of opium, m. xxx.

To be taken immediately. A fomentation of poppies to be applied to the seat of pain.

Twelve o'clock. The pain more urgent; skin hot; pulse increased; no action of the bowels. Warm water enema.

℞ *Calomel*, gr. v;
Opium, gr. i.

To be taken every two hours.

Two o'clock. The pain still very severe; unable to bear the least pressure of the hand; the sitting posture seemed the easiest. The medicines had been vomited. Ordered to be bled to eighteen ounces in full stream. Repeat the fomentations.

Three o'clock. Pain continues excessive; pulse 120, small and running; a quantity of dark grumous fluid was ejected from the stomach; the countenance slightly changed; skin bedewed with moisture; bowels motionless. Eighteen leeches to the affected region.

℞ *Croton-oil*, gtts. iss;
Tincture of opium, ℥i.

Continue the fomentation.

Five o'clock. No abatement of the pain. I now called in my friend Dr. Canham, who ordered an enema, consisting of two pounds of gruel and an ounce of castor-oil, to be given immediately.

℞ *Calomel*, gr. viij;
Opium, gr. iv;
Compound extract of colocynth, gr. xv.

Make into eight pills, of which let two be taken every other night.

The injection caused no pain.

Eight o'clock. The patient is reported to have slept half an hour; about six ounces of the injection have been evacuated, unaccompanied with the least fæcal odour; pain still the same; pulse weaker. Colocynth enema; omit the pills; effervescing draught.

Ten o'clock. The patient seemed revived, and drank freely of the effervescing draught, but said she was enduring much pain. We now left her, as she seemed inclined to doze, and intended to have called again in two hours. At eleven o'clock I was sent for, and on entering the apartment perceived her dissolution evidently approaching; her respiration was short and difficult; extremities cold; face livid; pulse hardly perceptible; there was apparently no intermission of the pain, and having had an involuntary discharge of fæces, she expired at half-past eleven o'clock.

Autopsy Twenty-six Hours after Death.

The muscular system was firm and healthy, with a due proportion of adipose substance; intestines distended with flatus, and the injections, and having a slight blush of inflammation. On exposing the stomach a perforation, the effect of ulceration, was discovered (situated on the anterior surface at the union of the pyloric with the cardiac portions). The ulcer, about the size of a fourpenny-piece, hollow, rather oval in shape, thin and shining, with callous edges. The stomach contained merely a dark-brown fluid, but was highly vascular, especially in the neighbourhood of the ulcer. The other organs of the body healthy.

The points which command attention in this instructive case are—

1. The suddenness of the attack.
2. The pain characterised by its severity and continuance without any alleviation.
3. The natural state of the pulse for some time after the attack.
4. The rapid sinking of the powers of life.

ACCIDENTS IN MINES.—Dr. Barham had had returns from the majority of all the mines in Devon and Cornwall, of accidents in them during the last two years. From these returns, he found that the whole number of underground miners amounted to 12,675. The number of accidents within the last two years had been 75; or a proportion of one in 338. The per-centage of deaths from mine accidents, stated last year to have occurred in the district comprising Gwennap, Illogan, and Camborne, was 17 3-10ths per cent. on the whole number of deaths in the district.—*Annual Report of the Cornwall Polytechnic Society.*

CARCINOMA OF THE STOMACH,

WITH SOFTENED AND HYPERTROPHIED LIVER.

By Wm. Henderson, M.D., Edinburgh.

It is not from anything new in the pathology of the following case that I send it, but from the peculiar arrangement of the parts at the pyloric orifice, it is rendered curious and interesting:—

Mr. Wilson, ætat. 45, an intelligent, active man, with white-pasty complexion and contracted features, suffered six summers ago from a smart attack of jaundice, which returned the two following summers: there was an interregnum of one year of tolerable good health; about the termination of that year he suffered much from dyspepsia and uneasiness across the epigastric region; six months ago he had a smart attack of hæmatemesis, and three months afterwards a second, though slight, attack, and almost constant uneasiness in the region of the liver or stomach; he never complained of great pain in both places at the same time; he also suffered much latterly from distention after eating; he had considerable thirst and frequent vomiting of a chocolate-coloured fluid, with coffee-looking grounds throughout it.

Dissection.—The liver was double its usual size, of a light cinnamon colour, very soft, and easily lacerable; in lifting it from its position the point of the finger penetrated its substance, otherwise healthy.

The stomach was enormously large, hypertrophied, and inflated; it filled the whole upper part of the abdomen, pushing the left lobe of the liver and diaphragm high into the chest. On opening it a considerable quantity of gas escaped; it contained half a gallon of chocolate-coloured fluid; the inner membrane was coated over with a great abundance of ropy mucus, with sooty-coloured streaks interspersed through it; it was capable of holding half a gallon more of fluid; its blood-vessels were much enlarged; there was an extensive deposition of scirrhous matter in the pyloric orifice; in the upper third of the orifice the scirrhoid deposit was half an inch in thickness; in the other two-thirds, or depending portion, one inch and a half in thickness; the thickened orifice made a complete twist or screw round upon itself from the left to the right in the exact manner of a bottle screw, by which the floor of the orifice was raised against the outlet in the manner of a valve, thus very much impeding direct exit from the viscus, the channel or passage being through the sinuosity of the screw; at the base or rise of the twist there were two small, minutely injected points. The kidneys were large, soft, and contained fluid blood; the heart, perhaps, larger than usual, was very flaccid; right ventricle empty; left contained a long fibrinous clot, which floated up the superior cava. The lungs were healthy, but studded over with black spots, not an uncommon appearance in persons of Mr. Wilson's age. A sister and he were the only survivors of a large family, all of whom died of consumption at various ages.

Corstorphine, Edinburgh,
July 29, 1842.

CASE OF

PLACENTAL PRESENTATION

WITH

FATAL TERMINATION.

To the Editor of The Lancet.

Sir,—After some reflection I have arrived at the conclusion that a faithful record of all unsuccessful or unfortunate cases, *though destitute of a signature*, would prove almost as beneficial to practitioners, and mankind in general, as the more prevalent custom of selecting those marvellous cases only where diagnosis, prognosis, result, and treatment kiss each other so happily, and to which are invariably appended the full name, address, qualification, &c., of the discriminating author. Should you deem this case of placental presentation of sufficient interest to your numerous readers to warrant its insertion in your valuable Journal, it is very much at your service, and I beg to subscribe myself your humble servant,

A General Practitioner.
London, July 21, 1842.

I was desired to visit Mrs. W., ætat. 36, about five o'clock p.m., on the 9th inst., and found that a midwife had been in attendance occasionally during the preceding week. She had suffered from hæmorrhage, at intervals, for the last ten days, for which she had kept in bed and applied cold applications. The countenance was exsanguious; pulse rather quick and soft; no appearance of distress or faintness; the hæmorrhage did not appear to be of any great extent; the pains of a grinding character and slight, with long intervals; none occurred during my visit. On making an examination per vaginam, I discovered what appeared to be a placental presentation at the extremity of a mass of coagula, with the os uteri dilated just sufficient to admit the top of the forefinger. I did not disturb the coagula, but prescribed an acidulated mixture, enjoined the recumbent position and the room to be kept cool, applied cold applications, and desired I might be sent for instantly on the re-appearance of flooding or accession of labour-pains.

I lost no time in communicating to a medical friend of considerable experience what I apprehended the case to be, who promised to be in readiness should his assistance be required.

At eight, p.m., I was again summoned, and found the pains increasing in rapidity, of short duration, however, and not felt to bear down; each pain was accompanied by a slight discharge. The diameter of the os uteri was, I believe, in some measure increased, inasmuch as the presentation was more distinctly felt; pulse remained the same as to power and frequency. After remaining half an hour, and finding no progress was being made, I left, having enjoined a strict observance of the rules before laid down, and that she should on no account be raised from the recumbent position.

At ten o'clock the pains had considerably increased in force and frequency, occurring every six or eight minutes, accompanied by sickness and a discharge of coagula; the os tincæ was now quite the size of a half-crown-piece, and dilatable. The patient's spirits were very good, having as yet experienced no sensations of distress or syncope; pulse about 100, and soft. Conceiving the time had now arrived for meeting the impending danger, I requested the immediate attendance of my friend, who lived close at hand. No trace of the membranes could be felt at any part of the presentation; the pains kept going on regularly; it was soon determined to deliver by turning immediately; so, having prepared an infusion of ergot, in case of its being found necessary to call in its aid, we proceeded without delay to accomplish this end, my friend steadying the uterus by pressure on the abdomen with both hands, whilst I (having first emptied the bladder) cautiously introduced my left hand into the vagina, the os uteri yielding most readily to the pressure of my fingers. Agreeable to Dr. Ramsbotham's instructions in his very valuable practical work on obstetricy, published last year, I passed my finger between the placenta and the uterine parietes, until I reached the membranes at the posterior part, about six inches from the os tincæ. I now pierced the membranes, and was very fortunate in speedily meeting with a foot, which was brought down into the vagina, and delivery accomplished in half an hour from this time, and chiefly by the efforts of the uterus itself, which acted regularly and with considerable power throughout: a slight gush of blood took place on the introduction of my hand between the placenta and uterus, and, with this exception, two ounces of blood could not have been lost after the commencement of delivery. The child was large and still-born; the placenta came away directly, without interference, and the uterus was felt to contract most satisfactorily; the patient spoke to her friends cheerfully, and the only symptom of exhaustion present was a rapid pulse. A bandage had been previously adjusted round the abdomen, it was now tightened, and a little warm stimulant given to the patient. My friend now left, and requested me to call and let him know, as I went home, how matters were going on. Having satisfied myself that the uterus still remained contracted, and that no hæmorrhage continued, I proceeded to wash my hands, congratulating myself on the favourable issue of the case, which was perhaps twenty minutes after delivery, when the poor woman suddenly exclaimed, "Oh, sir, I feel so faint; my legs and arms have no life in them; I am afraid I shall die yet." Her countenance indicated great distress; pulse very rapid and irregular. I immediately placed my hand upon the abdomen, and was surprised to find the uterus still firmly contracted to about the size of a cricket-ball; a glass of hot brandy and water was at once administered, assiduous frictions of the extremities had recourse to, and bottles of hot water applied to the feet and region of the heart. A spasmodic twitching of the muscles of the abdomen soon came on; hurried respiration (the patient imploring for more air, which had been freely admitted); a cold clammy perspiration pervaded the whole surface of the body, and in three-quarters of an hour from the time of delivery death closed the scene. No further hæmorrhage was found to have taken place.

DR. MARTIN BARRY ON FIBRE.

At the Manchester meeting of the British Association, Professor Owen communicated the principal results detailed in a memoir "On Fibre," by Dr. Martin Barry, just published in the Transactions of the Royal Society. In the red-blood disc, in muscle, in nerve, and in other tissues, Dr. Barry has represented filaments having a flat, grooved, and compound form, such as would be produced by two spiral threads running in opposite directions, and interlacing. In some instances it is possible to see that this really is the structure of the muscular fibril; and Dr. Barry showed to Professor Owen and to others, who were present, a muscular fibril so composed, the two spiral threads of which were separated at the end, where the fibril had been broken off. When the fasciculus in voluntary muscle breaks off short, or becomes notched, Dr. Barry states, that it is from the presence of large interlaced spirals, which surround minute bundles of fibrillæ, and necessitate a fracture directly across the fasciculus. These large spirals produce transverse striæ. They may be represented by the fingers of the two hands, when made to alternate with one another, and viewed on the extensor side. This state of the fasciculus is well seen in muscle from the leg of the boiled lobster. The membrane investing the fasciculus is formed of coalesced spirals. Transverse striæ are sometimes produced by the fibrillæ themselves, there being rows of spaces between the curves

of their spiral threads. It appears to have been these minute curves of spiral threads that misled observers into the belief that the muscular fibril had a beaded structure. In nerves it is by no means difficult to discern, not only that the "white substance" consists of filaments, but that filaments are present having the remarkable appearance above mentioned. Fibre, according to Dr. Barry's observations, is reproduced by self-division, and spirals coalesce into a membranous form; in undergoing which changes either all trace of the structure in question is lost, or the only part of it discernible is a dark central line.

The nature of the blood-corpuscle and its uses in the economy, Professor Owen stated to have been explained by Dr. Barry. He announces the important fact, that in this corpuscle there is formed a filament, such as that which he finds in all the tissues of the body. Professor Owen added, that he himself had had many opportunities of seeing these filaments in the corpuscle of the blood. The production of filaments out of blood corpuscles, Dr. Barry finds to be the essential circumstance in the coagulation of the blood; a process attended by the evolution of red-colouring matter, and producing appearances strongly resembling some of those met with in the tissues. In these examinations it is desirable to use the blood of some animal having the corpuscles large, such as the frog, or newt. In order to see distinctly the filament within the blood corpuscle, Dr. Barry adds some chemical reagent that will remove a portion of the red-colouring matter, without dissolving the filament itself. He has employed for this purpose a salt of mercury, of silver, or of chrome. It has been objected,—"You form the filament with your chemical reagent." But the tendency of such reagents, in a concentrated state, is destructive; and were it not so, would the same appearance be produced by salts so different as those of mercury, of silver, and of chrome? Besides which, the peculiar form of the filament entitles it to be considered, not as a chemical compound, but as an organised structure; the filament, however, may be discerned after coagulation has commenced, without the addition of any chemical reagent. Coagulating blood contains discs in two different states; the one comparatively pale, the other very red. It is in the latter discs that a filament is formed; and it is these discs which enter into the formation of the clot; the former, or pale discs, being merely entangled in the clot, or else remaining in the serum. Dr. Barry thinks that the filament escaped the notice of former observers, from their having directed their attention almost exclusively to the undeveloped discs which remained in the serum, and thus conceived that the blood-discs are of subordinate importance, and are not concerned in the evolution of fibrin.

ON THE

PATHOLOGY OF TUBERCULAR PHTHISIS PULMONALIS,

AND ON THE

PRINCIPLES OF TREATMENT.

By Sir Charles Scudamore, M.D., F.R.S.

It will, I think, be readily admitted that the importance of this subject cannot be overrated, and that notwithstanding its diligent investigation at home and abroad, there are many interesting points regarding the morbid anatomy and pathology of the disease which demand further inquiry. It is, indeed, one beset with various difficulties; nor can I flatter myself that I have overcome them. Should I be found to have thrown the smallest useful light on the subject, my labours will not be unrewarded with satisfaction.

Dr. Carswell, in his interesting article on tubercle, defines it as follows:—"Tuberculous matter is a pale yellow, or yellowish-grey, opake, unorganised substance; the form, consistence, and composition of which vary with the nature of the part in which it is formed, and the period at which it is examined." He adds, "the prevailing opinion among pathologists is, that the seat of tuberculous matter is the cellular tissue of organs; that it may, however, be formed on secreting surfaces, as in the mucous follicles of the intestines, perhaps in the air-cells and bronchi, the surface of the pleura, peritoneum, and likewise in false membranes, or other accidental and new products, and in the blood itself." He states it "to be very rare that tuberculous matter can be detected in the blood contained within its proper vessels; but that it is frequently met with in this fluid in the vessels of the spleen." He appears, however, to believe that it is contained in the circulating blood. He observes,—"As a morbid constituent of the blood, we can take no cognisance of the existence of tuberculous matter, otherwise than through the medium of the secretions, or until this fluid has ceased to circulate. Then it is seen to separate from the other constituents, the serum, fibrine, and colouring matter of the blood, and is distinguished by the peculiarity of its physical characters." He is of opinion that the external configuration or form of tuberculous matter depends on the particular organ, tissue, and situation in which it is produced.

Bayle, Laennec, and Louis, are the chief foreign pathologists to whose opinions I shall principally and briefly refer.

Bayle had the merit of throwing much new light on the nature of tubercular phthisis, but yet embarrassed the subject by introducing too many varieties of the disease. The granular tubercles, or miliary granulations, were first described by him, and, as

Laennec observes, were erroneously considered as different from tubercles.

Laennec himself treated of tubercles under two principal forms,—that of insulated bodies, and interstitial injection or infiltration; the insulated tubercles presenting four chief varieties, the miliary, crude, granular, and encysted; the interstitial injection offering three varieties, the irregular, the grey, and the yellow. He adds,—"Whatever be the form under which the tuberculous matter is developed, it presents at first the appearance of a grey semi-transparent substance, which gradually becomes yellow, opake, and very dense."

Andral appears to have entertained views of the nature of tubercle peculiar to himself. He observes,*—"In some parts we observe on the surface of the lobules, or in their substance only, some white very small points, almost microscopic; in other places they are multiplied and united; and, lastly, it sometimes happens that entire lobules seem formed merely of these points crowded together. Then the result is a large whitish mass, called *tubercle*, which is nothing but a lobule successively attacked and occupied by white points. He speaks of the tuberculous matter as being a simple product of secretion, and appearing to be primarily in a liquid state, then becomes solid, as if by a sort of crystallisation, according as its more fluid particles become absorbed." More than any other author, with the exception of Broussais, he considers tubercle to be of inflammatory origin.

Louis, commenting on the artificial divisions of Bayle, concurs with Laennec in his general views, and in the opinion that there exists but one species of phthisis, the tuberculous. He describes † tubercles "as tumours of a dull, yellowish-white aspect, of variable consistence, which soften after a certain time, empty themselves into the bronchial tubes, and give rise to excavations more or less considerable." The semi-transparent granulations, and grey matter existing either in the form of granulations, or in irregular masses, he does not designate as tuberculous, until it has passed into the yellowish-white condition. He observes,—"Thus, whether the grey matter assumed the form of granulations or of irregular masses, more or less considerable, it became sooner or later transformed into tubercle."

From the very slight sketch which I have given of the opinions of these authors, it will appear that the theory of tubercle is yet an unsettled point, whether we look to its first formation and progress; its localisation; separate or co-existent in its different forms, part at which softening begins; vascularity, or the contrary, and some other particulars.

* Spillan's Translation.

† Translation by Dr. Cowan.

I am familiar with the following several forms of tubercle:—

First. The minute (miliary) granulation appearing either semi-transparent, or almost wholly transparent, always more or less in clusters, lying immediately under the pleura, and in different parts of the parenchymatous structure.

Secondly. Granulations of rather larger size than the last, of a grey colour, usually very abundant, and disseminated throughout the lung.*

Both of these kinds of tubercle often become aggregated into close masses, and the second especially; the grey miliary so coalesce, that from this cause and from the albuminous part of their composition becoming more dense, they acquire a yellowish-white appearance. The miliary which I have first described sometimes passes into this, the second.

Thirdly. The yellowish fibrinous-looking tubercle, of a size varying from a seed of pearl-barley to a small almond, variously located in and about the lung, not numerous as the other kinds, sometimes even solitary.

Fourthly. Infiltration of softened tubercular matter in the tissues of the lung, and in the bronchial tubes.

The influence of situation on the external character of the tubercle is shown in the following example. In the lung of a child that died from phthisis, at six years of age, the size of the tubercles did not exceed that of a pin's-head; and the principal formation of the tubercular matter was in the neighbourhood of the trachea and bronchi, in oval masses, exceeding an inch in length, and firm in consistence, with here and there a tendency to soften in the centre.

It is very common to meet with distinct small masses of black substance, which in a hasty view may be mistaken for tubercles; and especially of a preparation in spirits, when viewed in the bottle, such erroneous conclusion might be drawn. Now and then it really happens that the granular tubercles are coated with this black substance (charcoal), and even occasionally have a bright, shining appearance.

To this form and appearance of tubercles, Bayle, I presume, alluded, when speaking of "miliary, shining, transparent granulations, sometimes marked with brilliant black points or lines."

After the statement of Louis, especially as to the coexistence of the different kinds of tubercle in the same lung, and the declaration of Laennec, that sooner or later a transformation takes place, it has surprised me to

* In the last twelve examples of tuberculated lungs which I have examined at the Marylebone Infirmary, I have found the grey granular tubercles alone pervading the organ, chiefly in the upper lobes, but sometimes in the lower also.

find how frequently one description of tubercle only possesses the lung. I have just now spoken of the prevalence of the examples of the grey granular tubercle which I met with at the Marylebone Infirmary.* I have also seen, in several instances, semi-transparent miliary unattended by another kind. The larger and pearly kind I have occasionally found without the presence of others.

In support of my observation, that there is a much greater disposition in tubercular formation to assume distinct groups in the lungs than we should be led to suppose from the statements of Laennec and Louis, I may refer the reader to the cases so fully detailed by Bayle in his researches on Pulmonary Phthisis. I consider that much further inquiry is necessary into the morbid anatomy of tubercle, before we can claim an exact knowledge of the subject; and I conceive it will be interesting to study the connection which the different kinds of pulmonary tubercle may possibly be found to have maintained with the symptoms in the respective cases; namely, whether the character of the phthisical symptoms may have been much modified or not, the disease been relatively rapid or slow in its progress, or in any way materially influenced by the particular kind of tubercle infesting the lungs? It is not to be supposed that during life we can discriminate on this point, or even form a satisfactory conjecture as to the particular kind of tubercle which may have formed in the lung, by means of auscultation or percussion. Nor do I presume to assert that we could improve our treatment of the case, even if we could possess this diagnosis of the varieties of tubercle in the living subject; but even this supposition ought not to check our zeal in improving our knowledge of every circumstance of the disease; for it is possible that by an attentive study of the case in connection with the appearances exhibited in the post-mortem examination, we may be conducted by the symptoms to a more faithful diagnosis in our future practice, to a more accurate treatment, and, at all events, to a more scientific acquaintance with the disease.

I have now to inquire into the nature of tubercle, as revealed to us by means of chemical experiments, of the microscope, and the labours of the dissecting-room. I have made very numerous chemical examinations of tubercle, and have found that all the varieties present one general result, of showing them to be composed always of albumen, occasionally with slight evidence of fibrine, always of lime in abundant proportion, and in varying degrees of combination with carbonic and phosphoric acids, more rarely with muriatic; and in some specimens I have detected the slight presence of magnesia.

The more hard the tubercle, the larger proportion of phosphate of lime does it contain; and when of less firmness the proportion is greater of the carbonate; and more especially in relation to this point, the albumen is more dense. I have not discovered any gelatine in tubercle. In proportion as it may possess transparency, the albumen which it contains is thinner, and of the least specific gravity; and on the contrary, when opake, it is more dense, possessing more of the albuminous principle and less water. Hence, then, the external characters of tubercle depend on its chemical composition, and on the particular tissue in which it is formed.

I examined a pearly-looking tubercle, commonly called the crude-yellow one, found under the peritoneal covering of the liver, about the size of half an almond, and of moderate firmness. It consisted of albumen, carbonate of lime, and a small proportion of phosphate. On the surface and throughout the substance of the liver and spleen there were harder tubercles, varying from the size of hemp-seed to that of a pea; and there were also small tubercles on the diaphragm and peritoneum. Not one was found in the lungs, but at the apex of the right lung there was a small cavity, capable of holding a pea, from which evidently a tubercle had been removed after softening. There were pleuritic adhesions on both sides. The lower lobe of the right lung was much congested, and its structure somewhat softened. In the history of this case (at the Marylebone Infirmary) it is stated that the patient, aged sixty-four, "had little or no symptom of pulmonary disease, and appeared to sink from debility."

I have met with many examples of calculous concretion, varying in size from a kidney-bean to that of a hemp-seed, in tuberculated lungs, and chiefly when the tubercles have been of the grey granular kind, opake, and of the appearance of very fine threads matted together. I have occasionally found the calculus firmly encysted, without having produced any signs of irritation in the surrounding tissue. Sometimes the phosphate of lime has predominated in the calculus, at others the carbonate.

I attend a lady who has during the last seven years expectorated from time to time, and never been free for more than six months, small pieces of calculus, which I found to consist wholly of carbonate of lime and animal matter. A few days before she gets rid of them she has a troublesome cough, with quicker respiration than usual, and pricking sensations at the pit of the stomach.

I know another lady who has occasionally coughed up calculi during the last thirty years. I was satisfied that in neither of

* I have to acknowledge my great obligations to Dr. Boyd, for the ready and kind manner in which he has rendered me opportunities of pursuing my inquiry into the morbid anatomy of the lungs.

these instances did the calculi come from the tonsils. It would appear, therefore, that calculi are occasionally formed in the lungs without the accompaniment of tubercles, and without producing serious irritation in the lung.

It may interest some of my readers that I should present some example of the chemical method employed in my examination of the tubercles.

Experiment 1.—*Yellowish-white crude tubercles*, taken from the same lung in which a calculus was found about the size of a pea, and which consisted almost wholly of carbonate of lime, there being only a trace of phosphate, and neither potash nor magnesia present. These tubercles were digested in distilled water, at a gentle heat, for several hours. To a portion of this liquid filtered oxalate of ammonia was added, and a slightly milky appearance was produced, indicating the presence of lime. A solution of nitrate of silver caused a slight white precipitate, perfectly soluble in ammonia, which in two or three hours darkened by exposure to light, and by transmitted light appeared, after long standing, as dark as port-wine become tawny. Hence was shown the presence of muriatic acid. By the addition of neutral bicarbonate of ammonia and the phosphate of soda, at first a milkishness appeared, which afterwards resolved itself into the well-known granular appearance, showing the triple phosphate, and thereby indicating the slight presence of magnesia. The same tubercle which had been acted on by water was digested in muriatic acid diluted with ten proportions of water. By oxalate of ammonia scarcely any disturbance. From pure ammonia a considerable precipitate, showing the phosphate to be the chief salt.

The watery solution was heated, and as it approached the boiling point coagulation took place, the evidence of albumen.

To a portion of the filtered liquor employed in the last process a solution was added, with a view to the discovery of gelatine; but, this test not being conclusive, another portion of the solution was concentrated by applying very gentle heat, and no gelatinisation appearing, it was inferred that gelatine was absent.

The residual matter, after the use of the several reagents as described, when dried, had a fibrous appearance, and might be supposed to be fibrine.

Experiment 2.—A solid tubercle, yellowish-white in colour, was treated in a similar manner, and gave as the result the evidence of phosphate, carbonate, and muriate of lime, and most of the latter. The contents of a cavity obtained from the same lung furnished similar results, but in smaller proportion of precipitate, there being more water present in the material.

Experiment 3.—A firmer tubercle than the last yielded phosphate of lime in larger proportion than the other combinations of lime.

In whatever kind of tubercle that was chosen for the trial of the action of the liquor potassæ, a pulpy mass was produced, not a solution of the material, although the digestion was assisted by long-continued gentle heat.

The black carbonaceous matter of the lungs, whether found hard or soft, was consumed before the flame of the spirit-lamp, and was evidently charcoal. It was not acted upon by water, acids, or alkali.

I have greatly extended my chemical examination of the composition of tubercle, but with no difference in the general results from the statement which I have given.

Gerber, in his "Elements of General Anatomy," has several divisions of tubercles, which are justly considered exceptionable by his translator, Mr. Gulliver.

Examination by the Microscope.

Assisted in the most kind manner by a microscopic friend, I have made numerous examinations of tubercle with his instrument; and the results which we obtained may be summed up in the following description.

Tubercle, when examined microscopically, is found to consist of an assemblage of corpuscles of variable size and shape, sometimes containing granular matter of exceedingly minute granules; and in some of the smaller kinds of tubercles, as in the grey miliary, besides the constituents above mentioned, there are cells of a more regular form and size, and larger than the corpuscles. In the crude or firm tubercles the corpuscles are closely packed together, and the granular matter scanty; whereas, on the contrary, in the larger and softer kinds the corpuscles are easily separable, and the granular matter in great abundance. The form of the corpuscles is for the most part globular or oval, but in the softened tubercles they are very irregular as to their shape, being often elongated and fusiform. They vary in diameter from about 1-3000th to 1-2000th of an inch. The granules, also, are very variable as to their size. Mixed with them are found myriads of minute globular bodies, scarcely capable of being measured by our ordinary micrometers, being much less in diameter than 1-25,000th of an inch. These are most abundant in the soft tubercles, which, in fact, appear to consist of little or nothing else but granules and broken-down corpuscles. The cells are more constant in size and shape than any other constituents, and average in diameter about 1-1500th of an inch. Nuclei are sometimes apparent, but as the tubercle increases in size the cells become disintegrated, and finally disappear.

We examined the lungs of a child who died from consumption at the age of six years.

The principal deposit of tuberculous matter was found in the neighbourhood of the trachea and bronchi, and in oval masses sometimes more than an inch in length, firm in consistence, and here and there with a tendency to soften in the centre. In the lungs the tubercles were very scanty and all soft, the semi-fluid mass being of a dirty yellow colour. Many, not much larger than the head of a pin, were seen quite soft. Under the microscope both the kinds of tubercle presented the same structure, viz., cells full of granules. The pulmonary tissue in the neighbourhood of the tubercles was healthy.

The following is the only very good example I have seen of the black shining-looking tubercles spoken of by Bayle. The lung exhibited throughout, closely set together, black shining granulations, of cartilaginous hardness, and here and there, in smaller proportion, the grey miliary granulations. In the midst of the black granulations there was a small cavity, containing a thinnish puriform fluid, which, examined under the microscope, represented cells of irregular form, appearing to be invested with the black granular matter. The black matter coating the tubercles was hard and gritty, having the appearance of charcoal, and which I afterwards ascertained to be this substance. The tuberculous matter exhibited cells of irregular form, containing dark nuclei and some detached nucleous matter which had escaped the cells.

The yellowish-white tubercle from the liver of the rabbit, which I examined at the same time, exhibited the usual appearance of cells and granules as found in the human subject.

I shall take the liberty of extracting from Mr. Gulliver's valuable observations on tubercle (appendix to Gerber) the following remarks:—

"It would seem, then, that the following parts most commonly compose the minute texture of tubercle. They may either occur separately, or be mixed together in various proportions. The granular matter is seldom or never absent.

"1. *Granular matter.*—This is composed of infinitely minute particles, as seen in the matrix containing the corpuscles and cells in figs. 252—255; and of minute spherules (fig. 271), remarkably variable in magnitude, generally from 1-30,000th to 1-8000th of an inch in diameter. Granular matter is the most prevalent ingredient of tubercle, almost always mixed with the other constituents, and frequently forming the entire mass of caseous tubercle.

"2. *Corpuscles.*—These are generally more or less globular or oval (figs. 252—254), but often either very irregular in form or shapeless (fig. 270). They usually vary from 1-6000th to 1-2000th of an inch in diameter. They are probably imperfect, degenerating, or blighted cells and nuclei. The corpuscles may be seen in crude or mature tuberculous matter; also commonly in the smallest caseous tubercles, especially of the serous membranes. The granular matter preponderates as the tuberculous mass increases.

"3. *Cells.*—The most common size of these is from 1-2600th to 1-1140th of an inch in diameter. They may be frequently recognised in greyish miliary tubercles, either of the lungs or serous membranes; but, as the tubercles increase in magnitude, the well-marked and complete cells (fig. 255) disappear, probably degenerating into the corpuscles and granular matter above mentioned.

"From the preceding observations it appears highly probable that tubercle, like the most highly organised tissues, has its origin in cells, but generally mixed at a very early period with granular matter. Tubercle, however, seems to differ essentially from the matter of plastic exudations, inasmuch as the cells of the latter not only grow into a higher organisation, but increase also in number towards the centre; in other words, plastic matter has an inherent power of multiplying and evolving organic germs. But tubercle has no such power; for it would appear that its primitive cells can only retrograde and degenerate, since they are wholly destitute from the beginning of the plastic force. "G. G."

Of the Vascularity or Non-vascularity of Tubercles.

It has occasionally been contended that minute blood-vessels enter into the structure of tubercle, although all the best authorities, foreign and English, have uniformly entertained the conviction that a tubercle is free from vascularity.

Dr. Carpenter, in his "Principles of Human Physiology," makes the following observation:—"The difference between the deposit of tubercle and that of healthy organisable material would appear to be this—that the former is composed of the albuminous constituents of the blood, a mere chemical compound which is not prepared to undergo organisation until it has passed through the condition of fibrine; whilst the latter is a portion of the vitalised fibrine, which possesses within itself the tendency to organisation, and only requires the contact of living membrane to enable it to pass into a regular structure."

This allusion to the chemical character of tubercle does not at all relate to the more important part of its constitution, the cells and granules. I saw at the College of Surgeons the lung of a monkey tuberculated throughout, very beautifully injected, in which the tubercular matter appeared most distinct, and perfectly free from the least particle of injection.

At my request, my friend very obligingly injected a human tuberculated lung. The

injection was completely successful, and in the same manner proved that not a single vessel entered the tubercular matter.

It results, I think, from these different examinations that the following conclusions may be adopted:—Tubercle is wholly free from vascularity; invariably it contains cells and granules, and in every kind of tubercle of the same structure. This, therefore, is the most essential part of its constitution; and I think it may be reasonably suggested that the tubercle is nourished and receives its growth by means of the cells, on the same principle that the non-vascular tissues are nourished by means of cells, as so ably shown by Mr. Toynbee; and as the plant receives the sap through the medium of cells instead of straight vessels. In this view of the subject we cannot pronounce tubercle to be inorganic; it is not heterogeneous, for it is a compound substance; and not wholly extravital, although certainly the lowest degree of vitality only can be assigned to it.

Another question has arisen, Where is the tubercle first formed, in the blood itself, or in the exact part where it is found? The favourite conclusion of those who have written on the subject appears to be, that the tubercular germ circulates in the blood, and is arrested by the extreme capillaries of the lungs, or other viscus or tissue. In answer to this opinion I have to observe that by the aid of the microscope the peculiar cell of tubercle is never found in the blood, and consequently that it must be a local formation. Tubercle is situated in various parts of the lung, as in the cellular tissue, without and within the air-cells and bronchi, but never external to the pleura. From the fact which I have witnessed in one examination by the microscope, that the blood of a person labouring under tubercular phthisis contained pus-globules, so called, more abundantly than the blood of a person in health, it has been suggested that hence some explanation may be offered of the origin of tubercles; but such an hypothesis must vanish when we consider that these particular globules abound in the blood of persons labouring under various kinds of disease, and are never absent from the blood of those in health; so that, in the present state of our knowledge, we are not enabled to theorise on the so called pus-globule (now known to be fibrine) as a morbid phenomenon. Dr. Martin Barry considers that the pus-globule is the altered nucleus of a corpuscle of the blood.

Pathology of Tubercle.—I am led to entertain the opinion that the formation of tubercular matter may be referred to a specific virus or poison in the blood, which I call the tubercular, and which expends itself in determining the formation of tubercles in different parts, but in the lungs more especially, such tubercular product being *sui generis* in regard to the structure of its cells, as already explained. The cells of the tubercle of phthisis differ from those of the cancerous tubercle, and from what are found in scrofulous matter. In other specific diseases, as cancer, syphilis, hydrophobia, small-pox, and more which might be named, we must of necessity assume that there exists a special poison capable of producing the distinct phenomena of disease relative to each particular virus; although it is in vain that, with all the advances of chemical knowledge, we endeavour to detect the presence of such virus in the blood. If we examine the contents of a small-pox pustule, we cannot, either by chemical tests, or by the aid of the microscope, discover any important difference between such pus and that of an ordinary ulcer.

Every distinct animal poison produces morbid phenomena in the constitution peculiar to itself. It is not more difficult to believe that a tubercular poison in the blood should give rise to the formation of tubercles in different parts, than that small-pox virus should produce pustules on the skin.

I conceive that this virus is occasionally transmitted from the blood of the parent to that of the child, developing itself in its effects at different periods of life. Of the existence of tubercles in the fœtus we find two examples related by Mr. Langstaff; one by Husson; two by Obler; and one by Chaussier. I examined the body of an infant that died in a state of extreme emaciation at the age of four months, the mother of the child having been in the last stage of tubercular phthisis when she gave birth to it. I never witnessed so remarkable and extensive a display of tubercles, both miliary and of a larger size; the former semi-transparent, the latter grey in colour. The lungs on each side, both upper and lower lobes, the liver, the spleen, the mesentery, and peritoneum, were universally studded with tubercles. I cannot relate a more striking instance than this of the tubercular disease in its highest activity, or more favourable to my theory that a specific virus in the blood is the source of tubercular formation. The child had received no other food than at first its mother's milk for a short period, then cow's milk diluted, and afterwards, for about a fortnight, breast-milk from a wet-nurse.

As is well known, consumption is both an acute and chronic disease; sometimes running its course so rapidly as to receive the expressive term of *galloping;* at others, lasting for many years. In the former case hectic fever assumes the highest activity, as is testified by the burning crimson cheeks and heat of skin; while, in the latter case, there may be an entire absence of febrile action; in such different degrees of intensity does the specific cause of the disease exist. Bayle observes—"The duration of phthisis is very variable. Some die in a few weeks, dating from the moment when they first exhi-

bited symptoms of the disease; others live more than fifty years, though they present unequivocal signs of the disorder all the time." From his tables it appears that rather more than one-fifth of the deaths at La Charité during a period of three years arose from phthisis. Subsequent estimates, both at home and abroad, do not furnish a lower calculation of the melancholy fatality of this most destructive of all disorders.

Sometimes, under very urgent circumstances of the disease, a temporary recovery takes place, and after a longer or shorter interval the symptoms recur and proceed to a fatal termination. Laennec speaks of secondary crops of tubercles. He observes—"Very commonly we observe in the same lung evident marks of two or three successive eruptions of tubercles." It shows, indeed, that a powerful constitutional cause is operating throughout the disease.

(To be continued.)

DUTY OF THE STATE TOWARDS MEDICAL MEN.

PRINCIPLES OF MEDICAL REFORM.

QUALIFICATIONS FOR PRACTICE. DETAILS OF SELF-GOVERNMENT IN THE PROFESSION. THE EXISTING MEDICAL CORPORATIONS. MEDICAL STUDENTS.

To the Editor of THE LANCET.

SIR,—In any new code of laws for the regulation of the medical profession, two fundamental principles ought to be secured in their fullest extent, and as the basis of all legislation. These principles are, the protection of the public health, and the security of the rights and privileges of medical men. The attainment of the first point would be secured by providing that no person, not duly qualified under the law, should practise either medicine or surgery for or without fee or reward.

The qualification to practise involves the question of medical education, and the tests or proofs of due knowledge gained, for the safe exercise of the profession.

The rights of medical men are inseparable from the first question, inasmuch as no person should risk the expenditure of time, labour, and money necessary to the attainment of his qualification or licence to practise, unless he felt himself to be effectually guarded by the laws against the competition of unlicensed and ignorant, though impudent and plausible empirics.

It is equally to the advantage of the public that they should thus be compelled to employ only licensed practitioners when requiring medical aid, as that the Government of the country should insist upon certain educational qualifications before the licence to practise is given.

If it be admitted that out of regard to public safety the Government stand possessed of a clear right to insist upon these proofs of knowledge from those seeking the diploma to practise, and thereby force upon medical men the necessity of a large previous expenditure of time and capital, so is it clear that it owes a reciprocal duty, as protector of the medical profession, to institute and conduct the prosecution of ignorant and unlicensed practitioners.

In the case of solicitors this security is provided for by the payment of an annual duty to the Government for permission to practise, while no person is qualified to take out his certificate without previous proof of having passed the necessary examinations; at the same time any one so practising without his certificate is liable to be, and is, prosecuted at the suit of the Crown. In fact, also, as regards medical practice, the Crown has even now a direct money interest in the stamps upon the apprenticeships of medical students; but the simple right of insisting upon due qualification as protective of public health, ought to be reciprocated by the protection of the medical profession, in the prosecution, at the suit of the Crown, of unlicensed and ignorant pretenders.

The Crown ought not, however, to be called upon to prosecute upon common information, nor upon the application of single, though aggrieved, persons. The proper channel of individual appeal would be through those assemblies or recognised councils of the medical body, the formation of which it will be my duty presently to speak of.

The division of the practice of the common profession of medicine into subordinate parts, is by no means incompatible with an uniform standard of qualification. Although taste, position, opportunities, and the like, may afterwards determine the channel into which an individual may choose to direct his energies, yet it ought to be made compulsory that at the outset of life he should prove his qualification to practise any and all departments of the healing art.

In this manner an unity of the profession would be attained, giving equal rights, conferring equal privileges. The attainment of honours, wealth, and public estimation will be within the aim of all. No sensibilities will be wounded by unmerited exclusion, no domination of irresponsible corporations will crush the more modest aspirations of genius. The field will be fair and open; extended mental culture and moral dignity, crowned with deserved success, will no longer be viewed by envious eyes, as bolstered up by artificial rank and exclusive privileges. Though the uniformity of rights be thus secured to the medical profession, yet would I

not exclude the possibility of the attainment of higher honours. While each practitioner of medicine would be empowered to select any particular branch of practice, or combine the whole, he should not be prevented obtaining separate honours, which a generous rivalry would accord to those establishing a claim to such distinctions. The possession of superior knowledge, the high cultivation of science (which last is seldom in our profession accompanied with corresponding pecuniary advantage) should entitle a person to demand, on proof of such acquirements, admission into our present colleges, and possess himself of their diploma. Some modification, a remodelling rather than a destruction of these institutions, would become necessary; and I shall hereafter have occasion to revert to this topic, in illustration of the plan that I would, with great submission, present to the notice of the profession.

MEDICAL EDUCATION.

The title of a medical practitioner should be understood to signify one licensed to practise medicine and surgery generally; for the art of the obstetrician, oculist, aurist, dentist, &c., are only subdivisions of one general whole, and cannot be safely or advantageously exercised, without a previous general acquaintance with the laws regulating healthy and morbid function.

To obtain such a licence as the one here contemplated, would demand a higher standard of education than at present exists; for, although a licence to practise in all departments, and the only one so to act in England, is now granted upon examination by the Company of Apothecaries, it is notorious that the test of knowledge attained is immeasurably below the necessities of the case.

For the purpose of admitting candidates to practise, examining boards should be formed, partly out of, and partly independent of, the existing corporations, and the examinations of candidates should be practical as well as theoretical; and, moreover, public, at least, if not generally so, open to the medical public.

As, however, it must be admitted that the mass of knowledge required for the safe granting of a licence to practise is very considerable, and of various kinds, it would be more prudent and more convenient that the examinations should not all be delayed to the period of obtaining the diploma. It would probably be advisable that there should even be a preliminary examination in the "literæ humaniores," without a certificate of competence in which, the candidate should not be considered qualified to commence his *medical* education. The time to be occupied in medical studies should be fixed at a minimum period, and at the expiry of certain defined minimum terms, examinations in separate or particular branches of medical science and art should take place, and on satisfaction of the examiners a certificate granted. Having obtained, say at three annual terms, all the certificates (three) necessary, from the examining boards, the candidate should be admissible for examination for the general licence before a separate and independent board. The candidate should have the option of choosing the order in which he would present himself at the minor examinations, as the period of his proficiency in certain departments of science might depend in individual cases upon opportunities which it would be fair to give him the advantage of.

It must be conceded by any reasonable body of men, that the means of acquiring a knowledge of any science or profession ought to be in every way unfettered, untrammelled by any conventional restrictions: in short, that facilities should be offered at least, and the enjoyment of those facilities rendered as little costly as is compatible with the fair remuneration of the teacher. The present system of a prescribed curriculum, a compulsory attendance of students at certain places and in defined seasons, is by no means necessary to the acquisition of the required knowledge. A cursory glance will expose some of the difficulties that now beset the student in obtaining a distinct and practical acquaintance with many of the preliminary branches of science.

A full and practical knowledge of anatomy cannot be attained but by a close attendance in the dissecting-room; the time, however, that should be thus devoted to one of the most essential studies is broken up and frittered away by the compulsory attendance upon daily and almost hourly classes. The mind of the student is distracted by the various subjects of inquiry, and his health is impaired by the miasma of putrefying bodies, which decompose upon the tables from want of time to perfect the commenced dissection.

Evils of this nature have been, it is true, recognised, and their effects partially, though imperfectly, guarded against, by diminishing the number of topics of inquiry, and by spreading the whole system of education over a greater space of time. But why, I may ask, might not the student be permitted to make himself master of medical botany, chemistry, a knowledge of the drugs and pharmacy, or indeed of any of the collateral branches of his art, at any period of his apprenticeship, if apprenticeships are to be continued at all? The examinations he is required to attend ought to be sufficient tests of his proficiency in the sciences, and he ought to be left free to obtain such knowledge, at home or abroad, in any manner that his means or opportunities place within his power or convenience.

There is but one restriction it might be advisable to make, and that is, he ought to be

compelled to study a certain definite period in the wards of any sufficiently large hospital or infirmary of the United Kingdom. However valuable may be the science taught in foreign hospitals,—however large may be the experience of their medical officers, and unbounded as are the facilities offered by the continental establishments for the sick, still the student ought to be required to attend a certain definite time at our own *home hospitals*, that he may inform himself of that practice which experience has shown to be best suited to the treatment of disease, modified as it is by the peculiarities of our climate, hereditary dispositions, or the characteristic differences of our British mode of living. With this exception, and a certificate of the candidate's having attained a certain age, I would leave the mode or order in which he acquires his professional information, as free and unfettered as becomes the true spirit of a liberal and scientific profession.

Having, then, presumed that the student has satisfactorily passed his preliminary examinations, and obtained the certificates then granted to him, he should be qualified to submit himself for examination for the general licence. But should circumstances arise which induce the student to delay this last period, I would give him the power of registering himself to that effect, to take the position of licensed assistant, dispensing or visiting, to a duly-qualified practitioner in medicine.

REGISTRATION.

All persons on receiving their diploma to practise should be registered in the order of their respective dates of passing the final examination, and should receive a proper, duly signed and sealed, certificate, or diploma.

It should also be required that an *annual* registration be made of all persons qualified to practise, with their respective Christian names and surnames, with their places of abode, and, if desired, their honorary titles and distinctions; and that lists should be printed under the authority of the central council of the profession, and given to each practitioner upon being required so to do. That this registration should have legal force, and upon a person proving himself to be the individual therein named, he should require no further evidence of his qualification to practise.

The machinery of such an annual registration should be as follows:—A registrar should be appointed for each county, who should keep a book in which, by a certain fixed day, week, or month, in each year, he should see that each member signed his name and place of abode. At the first registration of any practitioner he should be required to show his diploma, but having received a certificate of having been registered, the production of such diploma should not be in future required. Within a month of the time of the district registration being effected, the registrar should transmit his list to the central council, by whom a complete list of members qualified to practise in England and Wales should be made out and printed, and that, too, by a certain definite period in each year. The registration of the preceding year to be in force until the next list be published. Such a registration, it will be seen, is necessary as a preliminary to all elections.

The administration of the affairs of the medical profession comprises the control of the finance department; the registration of practitioners; the conduct of elections; the appointment of examining boards; and the forms and character of the examinations. Hence these affairs must be committed to the direction of a central board or council, to be elected out of the general body of the practitioners of medicine.

It is not a concession to the feelings of our profession, but a right inherent in it, that the election of such a council should be popular and unlimited; in other words, that each person who has qualified himself to practise should be entitled to vote for the appointment of councillors, and himself be eligible to become a candidate for such office. The only restriction of the latter right which it would be prudent to make, would be the attainment of a certain age, say thirty years, and as of necessity the sittings of such a central board must be in London; the members thereof should be required to reside in or within a certain definite distance of the metropolis.

Suppose, however, that the council be limited to thirty-six or forty-eight members, of whom ten or fifteen should vacate their seats annually, and not be eligible for re-election until after the expiration of twelve months, it would follow that an annual election of ten or fifteen councillors must take place by means of an enormous constituency, and one spread over the whole surface of England and Wales.

Supposing, also, that the form of election were by printed lists of candidates forwarded to each elector, the registrar requiring him to return it to scrutineers, signed, and with the names of the proper number of candidates clearly designated by him, still the vast bulk of the constituency would give rise to serious difficulties, and the qualification of candidates would, in the great majority of instances, be wholly unknown to the electors. Hence the choice might often fall upon the least eligible candidate, and chance too much operate, where prudence and judgment ought alone to prevail. Is it not possible, however, so to constitute the machinery of the elections as to obviate many of the difficulties, without dispossessing them of that character of freedom and popularity which ought to be the basis

of all representative bodies? I think it is, and to that point I would invite serious attention.

1st. A registrar should be appointed in each county to collect annually the names and residences of all persons licensed to practise, and therefore to vote, within their respective districts.

2nd. The licensed practitioners of each county could elect triennially three or five persons to act as a district council, resident in the principal town of each county. This council should act as the representatives of the practititioners in the election of the central and grand council of the profession; and it will hereafter be shown that other and important duties, conducive to the welfare of the profession, would devolve upon the district councils.

Thus, 1st, each licensed practitioner would be represented primarily by his proxies in the district committees, and this election would be wholly and entirely popular.

2ndly. It is more than probable that the persons appointed as proxies or district committee men, would be elected from the most eminent and respectable practitioners of the county towns; and it is at least certain that the character and qualifications of the candidates for this office would be generally well known to their brethren of the respective districts.

3rdly. The persons elected being, it is presumed, the most upright and eminent men resident in the provinces, would feel they held a responsible position in the right of voting for the central council, and would, undoubtedly, be in a better position, from their standing and more extensive acquaintance, for examining into and judging of the qualifications of candidates for the metropolitan council.

4thly. The number of actual voters for the central board would be reduced to between three hundred and three hundred and fifty * at the most, and greatly facilitate, from their comparatively small numbers, the labour and certainty of the most important of all the elections. The mode in which these elections might be conducted is by no means difficult.

The county registrars should print a list of candidates for the district committees, and send such a list to each practitioner within his limits. This list should be returned by a certain fixed day, with the number of the names (say three or five) selected, and the paper signed by the elector. His signature being compared by the registrar with the signed registration-book, and found to agree, the votes would be cast and the election declared.

* In London, boroughs might take the place of counties, I suppose.

The same form might be adopted in the elections of the central board; the constituency, however, being in this case the district committees,* acting as proxies of the general body. In such a manner a fair and popular election would be secured, and at the same time an intelligent and cautious selection of candidates effected.

The appointment of district councillor would be sought for as an honourable distinction, while the trust reposed in him by the provincial practitioners would ensure the necessary responsibility, seeing that their selection would mainly depend upon the manner in which they had executed their several functions.

Many advantages, I am inclined to think, would arise out of the appointment of these district councils. Complaints against unlicensed practitioners would be examined by them, and if these charges were borne out by inquiry, they would transmit the complaint to the central council, to whom their local knowledge would be of important service. I believe also that breaches of medical etiquette and the quarrels that occasionally will arise amongst medical men, would often be referred to these councils by the disputants as to a court or tribunal of honour, and their mediation would very often compose such differences, and prevent the injurious scandal of a more public course.

Such a board would not unfrequently be consulted by the local municipal authorities upon questions relating to the general health, in cases of epidemic disease, in investigating the causes of unusual mortality, and the like.

Having thus proposed the construction of district committees, one of whose important duties it would be to choose a central council resident in the metropolis, and having proposed to give to the elections as popular and open a form as is consistent with the secure working of that all-important principle, equal representation, we pass to a consideration of one of the principal functions of the grand council, the election of a board, and the forms of examination. That subject necessarily brings under our view the state of the present colleges of medicine, in whose hands is placed the right of conferring diplomas, and the licence to practise.

By the constitution of a central council to direct the affairs of the medical profession, and regulate the admission of candidates to practise, it would appear, at first sight, that all the powers at present vested in the medical corporations would necessarily cease, that their sources of income would be destroyed, and the collections of scientific objects, the work of many years of private and public munificence, be overthrown and scattered to the winds. Such is, however, nei-

* The district committees to consist of a number of men proportioned to the number of voters.

ther my object, nor would it be, in my estimation, the effect of the plan I propose.

I hold all of our medical corporations to be useful as they are, and capable, by improved management, of becoming the fountains of honour in our general art. I would wish to see them respected for their utility, honoured for their science, and venerated for the high position they might attain, and for the rewards to merit which they might be made capable of distributing to the most worthy of such distinctions.

I would desire to retain the Royal Colleges of Physicians and Surgeons as branches of our national boards of medical education; and I would heartily desire to see the Apothecaries' Company elevated into a Royal College of Pharmacy, repudiating the traffic in drugs, which now exists, as unworthy a scientific body, and utterly beneath the dignity of the medical profession.

As I have already stated, the central council should be qualified to admit persons to practise in any and all departments of the healing art, and their licence should alone be requisite to constitute a legal practitioner in medicine. But I would further propose that each of the three colleges should be empowered to grant doctorates: the one in medicine, the second in surgery, and the last in pharmacy. Such doctorates, while they did not confer any privilege of practice, would be deemed honours, and render the possessors of them eligible to be chosen upon the councils of their respective colleges, and to vote in the election of such colleges.

That a council so elected should choose from themselves a president and a board of examiners, and all subordinate officers, such as secretary, registrar, curators, &c., and should enact such laws as may be necessary to the management of their respective colleges.

That the president for the time being of these councils should be, *ex officio*, a member of the general or grand council of the profession.

That while such as are at present members of the council of each college, should remain for life, as in possession of a vested interest, all future vacancies, either by death or resignation, should be filled up by election; and every one possessed of a doctorate of the respective colleges, be entitled to vote. Persons thus elected not to retain office longer than five years, and not to be eligible for re-election until the expiry of twelve months after such vacation of office.

That the certificates of the three examinations required of the candidates on presenting themselves for final examination for the general licence to practise, be granted by the three colleges, restricted, however, to the departments over which they preside: *e. g.*, The College of Physicians to examine in the theory and practice of medicine, medical jurisprudence, morbid anatomy, &c. The College of Surgeons in anatomy, physiology, principles and practice of surgery, &c. The College of Pharmacy in chemistry, materia medica, medical botany, &c.

That each certificate should bear a fixed fee, the accumulations of which should form the income of each college; and their further source of income to be derived from the granting the diploma of doctorate. The control and expenditure of these monies to be vested in the council of the colleges.

That the "licence to practise" should also bear a small but fixed fee,* to defray the necessary expenses of the grand council.

Thus, although the licence to practise would be paid for through separate channels, and in divided portions, yet the total amount need not be made to exceed the sum now paid on receiving the diplomas of the College of Surgeons and the Hall conjointly; while the practitioner would have enlarged privileges, and a knowledge of certain protection in his functions, by the extinction of unlicensed interference.

Let us trace the course then of a youth from the period of his leaving school to his attainment of the highest honours of his profession. We will suppose his general education perfected, and he passes to his medical studies. If he be the son of an intelligent medical practitioner resident in any town where the medical school is of satisfactory reputation, the father will superintend the course of his investigations, point out the period of his attendance upon classes, or even teach particular subjects himself. When the youth has acquired a sufficient amount of knowledge to enable him to pass the first, or any one of the preliminary examinations, he presents himself before the London board, and, on satisfaction, receives his certificate. It may then happen that the parent is desirous of sending him to a distance from home, or even abroad, to acquire the special acquaintance with anatomy and physiology, that is only to be obtained by unremitting attendance in the dissecting-room. While thus engaged, he, perhaps, devotes his attention to practical, as distinguished from medical surgery, attends the hospital, and watches the surgical cases there displayed. Again: he returns, passes with honour his examination before the council of the Royal College of Surgeons, and applies to the most important part of his studies, the investigation of disease in all its varied forms. His industry is rewarded by his third certificate; and he now devotes himself to a resumé of the various branches of science he has been occupied in acquiring. The fragments are dovetailed together—the separate studies serve to influence and facilitate the whole; and instead,

* The inducement to increase fees by slighting examinations will, of course, be guarded against by the PUBLIC EXAMINATIONS.

as now, of attempting to reach all at once, and having his mind distracted by multifarious duties, he has, by concentrating himself at distinct periods upon definite topics, mastered the great difficulties of his profession. The acquisition of the certificate gives him a title to demand his examination before the central council, and he obtains his diploma and his right to practise. Being, perhaps, of an ardent and aspiring mind, his opportunities, may be, directing him to the practice of a particular department of the profession, he claims those higher distinctions to which extended science would justly entitle him. He devotes himself to medicine, and he aspires to the doctorate; and he offers himself to a further ordeal and test of merit at the Royal College of Physicians; or, desirous to take a lead in surgery, he applies for the honorary diploma of the Royal College of Surgeons. Would any be envious of his success? It is his devotion to the acquisition of knowledge, and his proof of having deserved this reward, by the sole test of practical examination, that would disarm the cavillers. He acquires no further right, no exclusive privilege. It is the honour alone for which he asks; and a college composed of such members would indeed rank high with the general body of the profession, and need fear no rivals, no detractors: the highest aspiration of their president might well be—"Palmam qui meruit ferat."

P. Q. M. F.

July, 1842.

KING'S COLLEGE HOSPITAL.

CASES, WITH CLINICAL REMARKS BY MR. FERGUSSON.

CONGENITAL PHYMOSIS.

Two of these cases had been lately in the hospital, and upon one of them the students had seen him operate at their last meeting. On that occasion he took the opportunity of making some observations on the methods which he pursued in performing a little operation for the relief of this malformation. The congenital phymosis was a very different condition to that produced by inflammation, but was, nevertheless, a cause of great inconvenience to the patients. The last case which he had operated upon was an example of this kind of malformation. The man came into the hospital, supposing that he was suffering from stricture of the urethra; the condition of the prepuce, however, induced him, Mr. Fergusson, to suppose that many of the symptoms under which he suffered, might depend on the constriction which it produced on the glans. In that case they saw him draw the prepuce forward, and by one stroke of the bistoury remove the elongated portion, and with the scissors slit up the mucous membrane in a vertical direction which from the retraction of the skin was left considerably longer; and then by the use of some stitches, endeavour to procure that which should be the great aim of the surgeon in these instances, union by the first intention. This union took place, and in a few days the man left the house, relieved from all inconvenience which he had previously experienced.

ABSCESS IN THE ILIAC FOSSA.—CARIES OF THE VERTEBRÆ.?

There was a man of the name of Clarke, lying in Canterbury ward, with an abscess in the iliac fossa, which pointed in the buttock. He had before remarked, that he could never entirely account for the emaciated condition of this patient, the discharge not being sufficiently profuse to produce such an effect. As his appetite continued good, and as there was no evidence of diseased bone being the cause of the constitutional disturbance, he was induced to look more favourably on the case, when he last alluded to it, than he did at the present moment. A fortnight had now elapsed since he had mentioned the case at lecture, and during that time the patient had neither gained flesh nor strength, but, on the contrary, had become more reduced. Under these circumstances it was very probable that there was caries of the vertebræ, and that the termination of the case would be unfavourable.

ULCER OF THE TONGUE.

The case of the man, Smith, in London ward, was well deserving of attention. He was sent into the hospital with an ulcer of the tongue, resembling soft cancer. When first admitted, his (Mr. F.'s) impression was, that an operation for the removal of the disease would be necessary, as there were all the indications of the disease alluded to; such as an excavated ulcer with a hardened base. From the previous history of the man, however, which was one anything but favourable to cancer, he was induced to pause before he proceeded to so cruel and formidable an operation, as the removal of half the tongue, the more especially as he learned that the patient had a somewhat similar attack a short time previously, which, after a little treatment, was perfectly cured. Under these circumstances he resolved to watch the case, and the patient was placed under regulated diet and a course of iodine. Under this plan the man had improved remarkably in a fortnight, and had continued gradually to make progress up to his discharge, when very little trace of the disease existed. He had little doubt but that in a short time, if attention were paid to this patient's health, that his tongue would become perfectly natural. This was a very valuable case for the pupils, for many reasons. I pointed ou

how careful we should be in giving an opinion, for here was an instance where those most conversant with the profession might have made a mistake. There were also a class of persons who supposed that a particular remedy was a specific for all forms of disease. To these parties a case like this would have afforded ample ground for improper deductions as to the power of iodine. It was difficult, in this case, to know to what to attribute the change; it was most likely, however, dependent on the regular habits and proper diet which the patient received in the house.

CONTRACTED KNEE.—OPERATION.

A boy lay in the same ward with a contracted knee, in which case many of them would remember he, last winter, divided the hamstrings, with the intention of assisting the gradual extension he wished to apply afterwards. This was very cautiously done, but the joint becoming tender, he desisted. Had he rapidly stretched out the limb in this case, he had little doubt but that some inflammation would have been set up, and have ended, most probably, in the complete destruction of all the tissues within the joint, the loss of the patient's limb, and, perhaps, of his life. The treatment he then adopted was that for inflammation of the knee. Counter-irritation was of the greatest benefit. After he had been out of the house some time, inflammation came on in the thigh, above the synovial membrane; by no means an unfrequent occurrence in cases where there was gelatinous effusion. This inflammation terminated in the formation of an abscess. As the patient was unwilling to allow it to be opened, and as he, Mr. F., did not deem it of immediate importance, he endeavoured to promote absorption by the use of tincture of iodine, blisters, &c. These, however, failed of producing the desired effect, and a small aperture was made in the formation. It had continued to discharge matter, although he had endeavoured to produce adhesion of its surfaces by pressure. He had little doubt but that amputation would be ultimately necessary; and were a surgeon anxious to remove a limb, he might conscientiously recommend an operation, but as the boy was at present quite unprepared for such a proceeding, he thought it but right to wait and see the result.

Another boy of the name of Worcester, in the same ward, was a case of much interest. He was first admitted into the hospital with inflammation in the skin, a little below the tuberosity of the tibia. The inflammation ended in the formation of an abscess, which was opened, and the matter found lying apparently externally to the periosteum. The bone was carefully examined by the probe, but no disease could be detected. The abscess healed, and the boy was discharged, apparently cured. A short time afterwards, when brought again into the hospital, he, Mr. F., discovered a sinus leading down to bare bone. From his previous experience of the tediousness of this kind of cases, he, without hesitation, recommended an operation. They saw him divide the integuments by a crucial incision, and having dissected them off the bone, he discovered a small aperture in its shell. With the gouge, an instrument he always used in these operations, they saw him, in the manner recommended by Mr. Hey, scoop out the whole of the disease: a plug of lint was then thrust into the cavity thus formed, and it was allowed to close by granulations. The patient was now about to leave the hospital, cured. By this simple proceeding, months, nay, even years of suffering had been saved to this patient.

Observations on Tuberculous Consumption, containing New Views on the Nature, Pathology, and Cure of that Disease; being an attempt to found its Treatment on Rational Principles, deduced from Physiology, and confirmed by extensive application. Illustrated by coloured Drawings. By J. S. CAMPBELL, M.D., Senior Physician to the St. Marylebone General Dispensary, &c. &c. London: Baillière. 8vo. Pp. 404.

THOUGH numerous are the treatises which medical literature present to us on "tubercular consumption," we are, however, still willing to receive the present contribution, which is an effort made to check the progress of a disease that annually finds in this country nearly twenty thousand victims,—levelling with the dust, in fact, one-fifth, at least, of those who fall into the grave, not here only, but in most other countries, and traces of which disease we find in nearly half of all those bodies which we have the opportunity of examining. The present work, moreover, is framed on the study of upwards of four hundred cases of the disease, the author having always in view that essential object, announced in the title "the foundation of the treatment on rational principles." We shall, therefore, lay before our readers what the author considers those principles to be, and our opinions of the treatment which he aims at establishing.

Dr. Campbell affirms that "tubercular consumption is a compound disease, and an effect of some aberration from healthy action deeply rooted in the system." This aberration, he considers, with Clarke, Todd, and others, to be an error of digestion. Those authors, however, have failed to connect this condition with pulmonary deposition.

"The link thus wanting," says Dr. Campbell, "I have endeavoured to supply, chiefly by examination of the capillary circulation connected with the right side of the heart, arriving at the conclusion, that while the properties of the blood in phthisis appear to be altered by a primary error of digestion, the immediate determining cause of tubercle is to be traced to certain vices of organisation, inherent in the capillaries of the pulmonary artery; these bodies being, in fact, constituted of minute globules originally existing in the blood, and retained in those vessels during its transit through the lungs."

Those vices of vascular organisation he presumes to be hereditary, and, with reference to the individual, unalterable. We quote the above passage at length, as an example of the inaccuracy of style in which the volume abounds, and of which we turn aside for a moment to admonish the author, and then omit all further notice of it.

To this first phase of the disease Dr. Campbell assigns the term "formative stage," as distinguished from the subsequent stage, or that "of reaction" when a peculiar influence is exercised towards the system by the local malady. The treatment of those stages respectively is considered, and the volume concludes with a record of several cases in which such treatment has been successfully applied.

In a long preliminary discussion on "the connection between the *blood* and life," the author aims at establishing a principle that in all organic life there is *one* general condition, inseparably connected with the exertion of each and all its functions. We think the views he advocates, considered physiologically, are too exclusive. A due share of influence over organic functions is not allowed to the *nervous* system, and the author has not brought forward anything like sufficient arguments to induce us to change this opinion. But in a pathological point of view, and more particularly as applicable to the present disease, they merit attention, and clearly show that which has not yet been well done,—namely, the extent to which the state of the system generally, and the functions of respiration and circulation, mutually influence each other.

Considering it as established that the primary effect of all action is the consumption of arterial blood, coincident with which is the production of venous blood, he proceeds to inquire how a want of uniformity may be produced between the supply of this fluid and the necessity for it? or, in other words, under what circumstances are the heart and lungs excited to an undue amount of action? thus—

"In one case the pulse and respirations are always relatively quick and easily accelerated, because the systemic vessels, either from an inherent excitability to natural action from slight causes, or from morbid increments of action, as in fever, inflammation, &c., consume, in a stated time, a relatively larger quantity of red blood than the lungs without undue action can create, or the heart without undue action distribute.

"In the other case these functions are unusually readily accelerated, because without the existence of any undue extension of systemic action, the pulmonic surfaces, whether from limitation of surface consequent on disease, or from presenting a natural structural disproportion to the body, are incapable of meeting without inordinate increase of their function, such quantity of red blood as the system consumes.

"Finally, we consider that there may exist a third cause of morbid acceleration of the functions alluded to, having its seat partly in altered organisation of the lung, and partly in a changed condition of the arterial blood consequent on this, by which that fluid is so deteriorated in its vital properties that a larger quantity is demanded to sustain a stated quantity of action than when it is presented to the aortic capillaries in a perfect state."

These views are subsequently applied with much ingenuity to the consideration of phthisis in its "stage of reaction," and afford many important and valuable conclusions not only in the treatment of this but of many other diseases.

Our author next proceeds to state, amongst other points, the present extent of our knowledge as to the local conditions under which the development of tubercle takes place, and thus concludes:—

"That we are yet in a great measure uninformed on many important points in the pathology of phthisis. It would appear that the abnormal action of the vessels which we express by the term inflammation, is in no way adequate to account for the development of the material cause of the disease; that the opinion which attributes its production to an erroneous action of secretory arteries, is not only destitute of positive proof, but in itself improbable, and that the one which refers it to some error in the function of nutrition," although true to some extent, still "it conveys no distinct information as to the origin of tubercle, much less does it afford

any data from which a rational practice in the disease may be deduced."

To these opinions we do not subscribe. Our space, however, requires us to pass on to the next chapter. In this the doctor's own opinions of the "formative stage" of the disease are to be found, to elucidate which he first inquires into the "nature and site" of tubercular matter. The identity of this matter with what has been called "the grey granulation" is considered; and in addition to the arguments founded on anatomical examination brought forward by Andral and Chomel to disprove the existence of such an identity, the author adduces some experiments of his own. He thus finds that the effects of maceration in water on those bodies respectively are entirely different.

"The 'grey granulations' decompose with a facility equal to the natural tissues, and become, in common with them, diffused throughout the liquid;" whilst "the yellow tubercles remain as whitish, yellow masses." This experiment shows a difference at least in *mechanical* constitution, but a further difference is proved to exist by the action of *chemical* agents; thus the liquor potassæ completely dissolves the yellow tubercle, but it has no effect on the grey granulations. These important and interesting facts are strongly opposed to the views which Laennec held concerning the nature of those latter bodies. There cannot now exist, we believe, any further doubts on the subject, or that any other relation subsists between them and yellow tubercle than a frequent coincidence of occurrence. As to their nature, we fully agree with Dr. Carswell in considering them to be the result of a change which has taken place in the secretion of the pulmonary mucous membrane. The author is then led to assume that tubercle "first shows itself in the lung as a yellowish friable matter, in points of various magnitudes of a round or ovoid form—that these points in their earliest stages are exceedingly minute—and that they increase in magnitude by the approximation of many fundamentally distinct." Their structure, when fully developed, agrees with this opinion of their mode of formation; thus the author's microscopic investigations lead him to infer, that "a large body of this kind is *ultimately* composed of innumerable small particles, surrounded by a delicate membrane; and *proximately* of somewhat larger nodules, the result of a union of the former—divided by partitions formed of compressed lung, which are sometimes appreciable by the unaided eye, and sometimes only come into view when glasses are employed."

Again: when a minute tubercle is examined, it is found to be "made up of round particles or molecules which adhere together by a delicate filamentous membrane; occasionally these molecules appear to run in lines forming a chain of soft, hair-like threads, with round swellings at certain distances, interlaced with other lines of a like description," conveying the idea of a body formed of many molecules, united through the medium of a tissue which forms their seat. These observations coincide with those previously made by Dr. Khun, who finds tubercles in their first stage to possess a mammillary aspect, to consist of an agglomeration of irregular yellow corpuscles, united to each other by an extremely delicate, filamentous membrane, "tuberculous tissue," which he describes "as having for its basis thread-like lines of gelatinous appearance, ramifying and uniting with themselves, and contained in a sort of mucous membrane envelope: round these threads, and within the mucous envelope, are spread a great many albuminous globules, which appear to be productions of the thread, which thus establishes a connection between the globules." Dr. Campbell believes that these appearances are due to "a series of transparent vessels, ramifying on a mucous tissue (the inner membrane of the air vesicles), and obstructed at certain points by the presence of a white substance;" the coalition of many such molecules forming a tubercle of appreciable size. We have quoted the passages at length. They tend to confirm an opinion which we had previously held, viz., that the origin of tubercle would be traced to a source like that of cancer and other heterologous formations—the growth by cells. Who that is acquainted with the recent observations on the mode of development of the various tissues, both normal and abnormal, will not perceive most striking analogies with the present description?

The seat of tubercle is next considered. The author in discussing it assumes the correctness of the opinion of Lombard—"that tubercle is connected with a morbid condition of the vessels which ramify on the lining membrane of the air-cells." Having, then, described the pre-existence of scrofulous matter in the blood, as so clearly shown by Dr. Carswell, he endeavours to trace it

source, but here insurmountable difficulties present themselves, and it is only possible to refer it to "some error in the early stages of digestion (sanguification) giving rise to a morbid condition of the blood, and which is present in all cases of struma, but which may not lead to a deposition of tubercular matter," except under certain local conditions.

The author then proceeds to inquire, Why is tubercular matter deposited in the lung? His views on this point are quite original; he believes that a want of due proportion between the size of the morbid particles contained in the blood and the diameter of the capillaries, is the cause of the arrest of the former in the course of the circulation. In support of this view he refers to the microscopic structure already described; and to the results of injections, in illustration of the latter, several coloured figures are given. These are intended to show that if in certain cases an injection consisting of vermilion and tallow be thrown into the pulmonary artery, the branches of the pulmonary vein, and even the left auricle, will be found to contain the fat deprived of the colouring particles which have been arrested in the capillaries of the lungs. This obstruction he finds proportioned to the tendency to, or existence of, a scrofulous diathesis in the individual, and hence concludes that a like arrest of the particles of tubercle present in the blood takes place in cases of pulmonary consumption.

Now, adopting this theory as true, we should be next led to apply it to the formation of other textures, healthy or diseased. We should infer that the elements which constitute the tissue of bone were deposited where this structure was necessary, because, forsooth, its particles were too large to circulate in certain vessels; the same must apply to other tissues. This, however, may not be an objection to the views now brought forward. But it certainly remains to be proved that this difference exists.

We believe that Dr. Campbell has accurately described and figured all that he saw; but we are satisfied that to those observations he has assigned an undue share of importance.

This separation of the constituents of the injection may occur from many causes quite independent of any structural diminution in the diameter of the capillaries; thus it may be owing to those vessels being partially obstructed by coagulated blood or fibrin, by their being subject to the influence of various contractile powers in their neighbourhood, or from various degrees of pressure. Again, this separation may be owing to a deposition of the coloured particles from an injection kept fluid for a certain time: such, at least, we believe to be an explanation of the appearances represented in fig. 6 of plate 1. It is a portion of injection mass taken from the *left* auricle, and in which the coloured particles have a tendency to accumulate at one part. Now, if the separation of the constituents of the injection had taken place in the capillaries of the lungs, we would expect that the colouring matter which remained would have become again diffused by the union of the currents in the many branches forming the pulmonary veins, and that a fluid again uniformly coloured would have reached the left auricle.

But it may be argued, why does this separation take place in cases of "tuberculous cachexia?" To this we can only reply, that we have made a complete and *uniform* injection of the lungs in an advanced stage of phthisis, using for the purpose the fluid described by Dr. Campbell. Whilst, on the other hand, we know that this filtration of the injection is very frequently observed in the dissecting-room to occur in other parts of the body; thus we see the femoral vein injected from the corresponding artery with a decolourised mass, and this, too, under most opposite circumstances. Such considerations, then, lead us to reject the theory which would explain the deposition of tubercular matter on those purely physical principles. Its cause will remain a mystery until the phenomena of secretion and nutrition are understood. In bringing this part of the subject to a close, we can but point it out as the result of a hasty and imperfect generalisation. The influence which tubercle deposited in the lungs exercises over the organs and functions generally, or the "stage of reaction," is treated of in the third chapter: a portion of the volume which will be referred to with pleasure and advantage. The author endeavours,

"First by description, and secondly by plates, to illustrate two positions.

"1st. That where consolidation of the lung depends on tubercular deposition, there exists a physical condition in certain portions of the organ, and certain stages of the disease, which permits the transmission of

blood over surfaces to which the air is no longer admitted.

"2nd. That where consolidation of the lung depends on causes which are purely inflammatory, the pulmonary circulation ceases, on surfaces whose tissue the air has failed to traverse. In the former case a certain portion of blood which had not been subject to the influence of the inspired air reaches the left side of the heart, and thus circulates through the system generally; in the latter case, though the respiratory surface of the lungs is diminished, yet the blood transmitted to and from the left side of the heart is of a purely arterial character." On this difference in the circulating fluid he founds an explanation of the fact, "that the intensity of the morbid reaction which arises from organic changes brought upon the lung, does not bear nearly so strict relation to the *quantity* of the organ which is changed as to the *nature* of the change itself."

Illustrations of this principle are drawn from the varieties observed in the effects produced on the animal and strictly organic functions by the several obstructions to which the function of the lungs is liable. The pathological observations of the author clearly establish in this section, if further evidence be necessary, the non-vascularity of tubercle.

We come next to *the treatment*. In doing so we are induced to say a few words on the chances of a favourable result following any mode of practice in the treatment of a disease which has been always considered to be more certainly fatal than any other. Before the application of physical diagnosis to diseases of the chest, and when the existence of phthisis was inferred from the character of the general symptoms only, many cases of complete recovery were recorded; the general symptoms had diminished or disappeared entirely; but the errors of diagnosis to which such cases were liable, have led many to form doubts as to their real nature. Now, however, those difficulties have been removed; our doubts no longer exist. Physical diagnosis and pathological research show us that recovery takes place in many cases of true tubercular deposit in the lung. The term "recovery" being understood to mean an arrest of the progress of the disease, the disappearance of the general symptoms, and the performance of the various functions without inconvenience to the individual; the signs of local disease at the same time undergoing a change, or ceasing altogether. In illustration of the argument, we would refer to what we daily witness in the wards of an hospital; we there find, for instance, two classes of cases, the first consisting of individuals labouring under various other diseases, but in whom there exist well-marked signs of local tubercular deposit, the general symptoms being absent altogether, or so slight as only to be elicited by careful inquiry; in the other class we find the general symptoms well marked, without any greater extent of local disease. Now, common observation shows that many individuals of this latter class are restored to the condition of the former one; in other words, the general symptoms of pulmonary disease cease to exist, and the patient no longer labours under any inconvenience from it.

Post-mortem examinations confirm the opinion which we have expressed. They show us the presence of tubercular disease of the lungs in innumerable cases, when we should never have been led by general symptoms to expect it; and, further, many of them show that we would be justified not merely in saying that the symptoms had ceased, but that the local disease itself had disappeared; in fact, that a perfect cure had taken place. Satisfied of the possibility of such a result, we are next led to inquire the means to so desirable an end. With this view our author endeavours,

"1. To counteract that morbid state of the digestive organs originating the matter, without which tubercles cannot be produced.

"2. To accomplish a solution of this matter, after it has passed into the blood, and thus arrest its local deposition, presumed to depend on mechanical retention in the extreme vessels of the pulmonary artery.

"3. To place and retain the patient under such circumstances, in reference to his medical, dietetic, and general treatment, as seem on rational principles best calculated to meet those evils which result from the existing state of his respiratory organs, thus affording time for removal by the natural process of softening of such tubercles as already actually exist."

The two first indications refer distinctly to separate stages in the pathology of the disease. Being, however, all but simultaneous in their occurrence, and to be discriminated with difficulty in practice, they are treated of together. The first object should be to prevent the formation of the diseased particles, which entering into the constitution of the blood, become the source of tubercular deposit. With that view the symptoms of "strumous dyspepsia," or "tubercular cachexia," are carefully detailed, and the remedies, both medicinal and dietetic, fully treated

of, and this in such a manner as to merit a most attentive perusal.

But the blood may have become already charged with those diseased particles, or the slow process of their deposition in the texture of the lungs may have already commenced. Our object, then, must be to devise some means for their removal.

"In reflecting," says the author, "on the remedies likely to effect an object which thus appeared of great importance, I was led to examine into the degrees of solvent power exerted towards the matter of tubercle by various substances; and, as already stated, after trying a large number of solutions, none were found which, in this respect, at all equalled the alkalies in a state of purity."

These views, supported by the previously observed effects of such remedies in external scrofula, and by the generally received opinion in the humoral schools of pathology, led Dr. Campbell to make trial of the liquor potassæ in the treatment of pulmonary consumption, and for ten years he has adopted the practice in a very large number of cases, and with such favourable results as induce him now to come before the public. He insists on the necessity of giving the remedy uncombined with acid, and that to be useful it must be persevered with; the dose for an adult being from thirty to forty minims given three times a-day in water or any bland fluid.

"In all cases the alkali must be employed as the fundamental part of the treatment, and whatever other means may be deemed proper to meet symptoms, or for any other reason must not be such as to interfere with its caustic qualities."

We have thus stated briefly Dr. Campbell's views on the action of his favourite remedy; in those views, however, we cannot agree. We do not deny that in the hands of Dr. Campbell many cases of consumption have been cured, in the sense, at least, in which we have already used the term. Such, in general, is the character of the cases which he records. But we ask, How much of this success is due to other means, adopted at the same time, such as regulation of the diet, atmosphere, clothing, as well as various remedies given at the same time with the view of merely treating symptoms? We see, daily, cases which correspond with those recorded, and which do well under the most varied modes of treatment; emetics, tonics, antiphlogistics, counter-irritants, conium, and ipecacuanha, and so on, the success of the treatment depending on the character of the local disease, phenomena which afford a ready explanation of this confident zeal with which those various remedies have been at different times extolled.

Thus granting that the treatment adopted has often been followed by success, we yet refuse the credit of this success to the action of the alkali alone. There is great difficulty in supposing that the effects of "pure liquor potassæ" on tubercular matter out of the body would at all correspond with the effects of the internal administration of that remedy; it presupposes a change in the chemical composition of the blood, and consequently in its organisation. But granting that it may become a part of the circulating fluid, how is it to reach an extra-vascular mass, already deposited? We know that this class of remedies is rapidly eliminated by the secreting action of the kidneys. Dr. Campbell's conclusions as to the action of liquor potassæ must be rejected, and if its usefulness in pulmonary consumption be admitted, still it must be solely on the principle of its acting as a tonic, either directly or indirectly through its influence over the digestive mucous membrane. Were we to adopt the opinions of Carswell on the location of tubercle, the recognised influence of this remedy over the secretion of mucous membranes may deserve attention.

The importance of the views brought forward in this work, their originality, and the ingenuity with which they are advocated, have led us to occupy thus much space on its contents, but we must now limit ourselves to a mere mention of the contents of the last chapter, which describes the treatment of the disease when established, "the stage of reaction." It is described under four divisions as follows:—

"1. The restriction of systemic action considered under three heads—diet; air and exercise; medicinal agents. 2. Theory of, and means of encouraging vicarious respiration. 3. Remedies directly applied to the lungs by inhalation. 4. Treatment of complications and symptoms, inflammatory complications; hectic fever; hæmoptysis; cough; perspirations."

This portion of the volume occupies over one hundred pages, and every page contains more or less useful, because practical, information. Finally, we may observe that this volume, containing many ingenious and highly original views, the results of an exten-

sive and careful study of the phenomena of the disease, may be consulted with advantage by any one who, having it within reach, is professionally interested in the nature and treatment of consumption.

NON-RESTRAINT OF LUNATICS

(WITH REFERENCE TO MR. R. G. HILL'S NOTE, PAGE 624).

QUÆSTOR attacks no one. He asks four questions of your Lincoln correspondent.

1. Has manual coercion been disused in all cases at Lincoln?

2. Was manual coercion dispensed with, or was it not, in the case of the late Mr. M.?

3. In cases like that of the late Mr. M., is there, or is there not, a necessity for manual, in the absence of instrumental and seclusive restraint?

4. If no such necessity exist, what is the treatment which ought to be pursued?

These questions remain unanswered. Similar questions have been repeatedly put, and as frequently avoided.

"Quæstor" submits that his questions are fair questions; that a name and address are not necessary to the authentication of a *query*; that the medical profession expects frankness on the part of those who claim discoveries; and that it admits of no alkahest, no nostrum, no grand arcanum.

If Mr. Hill declines giving any information upon a mode of treatment of which he professes himself to be the originator, will your anonymous correspondent at Lincoln, who seems to know something about the matter, be more communicative? The answers to these questions are absolutely necessary to the definition of the term *non-restraint*, upon the exact meaning of which expression no three practitioners seem to be agreed.

July 27, 1842.

MEDICAL PUBLICATION SOCIETY.

To the Editor of THE LANCET.

SIR,—With respect to Mr. D. Owen's communication in the last number of THE LANCET, I beg to observe that a committee of medical men in London is about to be organised for the institution of a Medical Publication Society by subscription, the objects of which will be detailed by prospectus, when the arrangements are completed. I am, Sir, your obedient servant,

Χειρ.

London, July 27, 1842.

BRENTFORD UNION MEDICAL CONTRACTS.

To the Editor of THE LANCET.

SIR,—I beg to enclose for insertion in your valuable Journal, a correct statement of the population, area, and salaries, &c., of the Brentford Union medical districts. The board of guardians having determined on continuing the existing contracts until Christmas next, finding so much opposition from the medical gentlemen in the union. Your obedient servant,

Z.

July 23, 1842.

*** This communication has been authenticated.

Districts, 1841.	Area in Acres.	Population, 1841.	Salary.	Rate per Head on Gross Population.	Average No. of Cases, 1841.	Per Case.	Assessment to the Poor-rate.
			£	*d.*		*s. d.*	£
Acton.....	2260	2665	20	1¼ 3/10	64	6 0	10,520
Chiswick	1120	5811	60	2¼ 2/10	480	2 6	16,006
Ealing.....	3930	8407	90	2 3/10	376	4 9	30,151
New Brentford	230	2174					6200
Hanwell	1160	1468					5576
Perivale	660	47	35	4	124	5 7	1348
Greenford	2070	588					3918
Heston	3720	3739	40	2¼ 4/10	200	4 0	16,706
Isleworth	3120	6255	45	1¾ 4/10	244	3 8	21,538
Twickenham ..	2240	5209	36	1¾ 4/10	264	2 8½	19,325
Union House ..		359	60		484	2 5¾	
Total..	20,510	37,054	386		2236		131,288

Number of paupers who have actually received relief—5562.

Rate per head on the said paupers, 1*s.* 2*d.*

Number of cases, 2236.

Average per case, 3*s.* 5½*d.*

Rate in the pound on the assessment to the poor-rate for medical attendance on the whole union, 7-10ths of 1*d.*

THE LANCET.

London, Saturday, August 6, 1842.

A TRIAL which took place at the Shrewsbury assizes, and is reported very fully in the *Shrewsbury News*, presents two or three points of interest at the present time. It was an action brought by a surgeon and apothecary to recover the amount of his bill for medicine and attendance. The charges in the bill were 18*l.* 11s. 6d. for medicines, and 79*l.* 4s. for attendance on a patient, from June 23rd, 1840, until June 7th, 1841, The defendant paid 55*l.* into court, but the jury found a verdict for 97*l.* 15s. 6d., being the whole amount claimed, and a shilling damages. Of course the verdict *carried costs*, and the "finding" of *a shilling damages* was a niggardly superfluity on the part of the jury, whom the law, in *that* respect, beats in justice. We had prepared for this Journal a very full report of the trial (which occupies not less than six long columns in the newspaper), but must postpone its insertion for a week; and in the mean time supply in this place, with some remarks, a brief notice of the principal facts, which were not controverted.

The plaintiff, Mr. HENRY KEATE, had retained Mr. Serjeant TALFOURD, who is now well known to the profession by the attempts which have been made to render him serviceable in Parliament as an advocate for certain changes in the laws relating to medical affairs. The learned serjeant stated the case at considerable length. The patient, Mr. PERKINS, was a man of a somewhat singular disposition, a bachelor, and having no near relatives, his niece, Mrs. CLARKE, the defendant, claimed under the will. He was a maltster and a farmer, and had followed these pursuits so successfully, that he retired in affluent circumstances, and died worth fourteen or fifteen thousand pounds. Arrived at the advanced age of seventy, he was seized with what was termed a combination of dropsy and rheumatism — perhaps rheumatism affecting the heart as well as the limbs, and giving rise to general dropsy. He "lost the use of his limbs" in June, 1840, and was closely confined to his bed, where he was assiduously attended by Mr. KEATE up to the end of the year, when Mr. KEATE sent in his bill, amounting to fifteen guineas; 3*l.* 7s. 6d. for medicines, and 12*l.* 7s. 6d. for twenty-three visits, at 7s. 6d. each. Mr. PERKINS thought the charges reasonable, and offered to pay Mr. KEATE, who, however, remarked, "Don't put yourself to any trouble, it will do at another time." The housekeeper proved that the patient was visited three or four times a-week at one time. He then became convalescent, and was seen less frequently; but after Christmas, 1840, he always *sent for* Mr. KEATE two or three times a-day, and not unfrequently in the night. The visits varied in length from twenty minutes to two hours. Mr. KEATE, who had been in practice for seven years, applied the leeches, plasters to the back sore from lying, lotions, and embrocations, at first himself, and was often called upon to superintend their application, either by his assistant or the housekeeper. Mr. KEATE did not charge for every visit; he neglected in the hurry of practice to put every one down; but for the attendance from January 2 to June 7, 1842, during one hundred and fifty-seven days, he charged one hundred and seventy-four visits, at 7s. 6d. each, and three visits in the night, at 10s. 6d. each, making, with 15*l.* 4s. for medicines, 82*l.* 0s. 6d.

The facts relative to the assiduity of Mr. KEATE, and his humane attention to the feelings and wishes of his patient, were fully established. Mr. WILLIAM CLEMENT, Mr. COLEY, of Bridgenorth, Mr. THOMAS PIDDUCK, and other respectable practitioners, having looked through the charges, and heard the evidence, pronounced the bill to be "fair, reasonable, and moderate."

The learned judge, ERSKINE, in summing up, said that in nine cases out of ten it was impossible for a medical man to prove the

number of visits he had made to patients, because he often made them alone, and without any witness. It was less difficult to prove the delivery of medicines and the quantity of them. This had not been proved in the present instance; because Mr. KEATE's former assistant, DAWSON, could not speak to the items without the books, which were not produced, as they ought to have been. If the jury were satisfied that the items were correct, they would be guided by what they had heard from the witnesses as to the usages of the profession:—

"It would materially have helped them if the bill which was said to have been delivered to Mr. Perkins, of fifteen guineas, at Christmas, 1840, had been produced; for if he approved of the charges in that, and the subsequent charges were found to be the same, undoubtedly it would have been conclusive evidence of the reasonableness of the whole bill. But there was no legal evidence as to the fifteen-guinea bill being included in the gross bill. True, there was in the gross bill a charge amounting at the end of 1840 to fifteen guineas; but still it had not been proved that that fifteen guineas was the bill of which Mr. Perkins, according to the witness Sarah Thomas, had expressed himself so perfectly satisfied. Nevertheless, if they were of opinion that it was the same bill, their verdict would then be for the full amount; because in that case it would be evident that the deceased thought Mr. Keate's charges only fair and reasonable for the trouble he had given him; and if patients gave extra trouble, and were content to pay for it during their lives, it was not for their administrators after death, and when sufficient funds remained to pay for that trouble, to complain of such charges; and he thought it *much better that surgeons should be remunerated in that manner, rather than in proportion to the amount of drugs they prevailed upon their patients to swallow.*"

The amount recovered in this case is not more than Mr. KEATE was entitled to receive, but it is, we believe, more than was ever recovered before, by an apothecary and surgeon, for the like services. Hence we shall give a report of all the essential points of the case. There were, however, extrinsic circumstances connected with it, which had, probably, some influence on the minds of the jury. The action was not defended by the patient, but by his administrators, Mrs. and r. CLARKE; with whom Mr. PERKINS had been on no terms of intimacy or friendship, although he allowed the property to revert to them at his decease. Mr. KEATE had afforded the old man mental solace in his last days, and had exerted himself to the utmost to mitigate the physical sufferings of a painful disease: the question with the jury was, should 95*l.* be paid to KEATE out of the 14,000*l.* left; or should it go to relatives who had yielded the industrious accumulator of that large sum not the slightest service or consolation? Would Mr. PERKINS himself, if he could become acquainted with the circumstances, be dissatisfied with that allocation of a fraction of his fortune? On the one hand stood his faithful medical attendant—for whose services he was deeply grateful—demanding a sum which respectable practitioners of the town declared was "fair, reasonable, and moderate," for his professional services; on the other hand was the husband of a not very grateful niece, refusing this "fair sum," and paying to a troop of lawyers (with Mr. Serjeant LUDLOW at their head, acting buffoon to the party, at the trial,) a much larger sum, to "ridicule the "conglomeration of nervous and bodily mis-"fortunes under which Mr. PERKINS la-"boured," and died.

We have heard a great deal of the lessons of morality taught in our courts of justice, and may, we presume, take Mr. Serjeant LUDLOW's defence in this case as a fair specimen of that. The reporter of the *Shrewsbury News* makes the following remark on the learned serjeant's "amusing" cross-examination of the witnesses:—"The "jocularity of his questions and inter-"jections would be wholly lost on our "readers, without we were able to convey "the *naive* and racy manner of the speaker, "whose subsequent address for the defend-"ants must remain unappreciated for the "same reason." And winds up the report in nearly these words:—"The learned ser-"jeant concluded a most *long and humorous* "*address*, by ridiculing the conglomeration "of nervous and bodily misfortunes under "which Mr. PERKINS laboured, scouting the

"idea that they required medical visits at "all; justifying his own conduct in letting "the case go to the jury without calling "witnesses, and expressing a confident be- "lief that the jury would not permit the de- "fendants to be victimised, because they hap- "pened to be the representatives of a poor "dead old man, who had made a good deal "of money as a maltster and a farmer!"

We infer from this and the address itself, the *words* of which appear to be fully reported, that the serjeant's wit is of a very subtile, evanescent, volatile character, utterly unlike the wit of SWIFT, STERNE, or CERVANTES, and incapable of being fixed on paper; for we never met with a duller distillation than this address of the old jokes on apothecaries, plasters, drugs, and doctors. Wit does sometimes degenerate into buffoonery, or, at any rate, buffoonery is mistaken for wit at races and country fairs, where such questions as the following,—"Did you take out the "medicine in a fly van, a wheelbarrow, or a "basket?" fall very happily from the mouths of vagrant stage-players; but lose much of their effect in the mouths of learned serjeants, who are no match for the "fool" at "interjections" and "jocularity," to say nothing of mouthing and "manner," either "*naïve*" or "racy."

Mr. Serjeant LUDLOW is, we can readily believe, a better lawyer than joker, and a very accomplished person, in his way; but it is on this account that the course he took in the defence is to be deprecated as a piece of judicial immorality. Mr. Serjeant LUDLOW appeared in court as the representative of his clients, who had Mr. PERKINS's money in their pockets; they had been just put in possession of the earnings of this honest, industrious maltster; they were luxuriating on the labour of his head and hands; their children will be, perhaps, raised by his fortune. Now, was it decent for Mr. Serjeant LUDLOW, avowedly in the pay of CLARKE and Co., to heap ridicule on the memory of this hard-working gentleman, to hold up the infirmities of his old age, and the sufferings which terminated in his death—"his conglomeration" of agonies—to the contempt and laughter of a court of justice for the small chance of depriving the medical man of his fees, particularly when Mr. CLARKE came into possession of the "poor old man's" wealth, by the accident of marrying his niece? To have rejected the fortune would have been high-spirited. To have preserved a decent silence—to have raised a stone and written an epitaph over the body, would have been customary; but it was taking a false step to expend his money in paying a gentleman with a black gown and a powdered patched wig to defame an uncle's memory, and to deride his sufferings before the country and her MAJESTY's judges. Such was the position in which Mr. Serjeant LUDLOW placed his clients. Ingratitude is appreciated at its just value in this country; and we do not wonder, under all the circumstances, and after this speech, that Mr. KEATE obtained not only the verdict of the jury, but the sympathy and congratulations of the Salopian public.

It will be perceived that the circumstances of the case were peculiar; still we think it valuable as a precedent.

BRITISH MEDICAL ASSOCIATION.

Exeter Hall, August 2, 1842.

Dr. WEBSTER, President, in the chair.

A LETTER was read from the Secretary of State for the Home Department, informing the council that he had laid before the Queen the petition against granting a new charter to any medical institution. Letters were also received from Lord Campbell and Mr. Ward, M.P., on presenting similar petitions to the Lords and Commons respectively, and since the last meeting letters have been received from the following associations, stating their intention of petitioning the Queen, Lords, and Commons, on the same subject; the Glasgow, Cornwall, South Devon, and West Somerset Medical Associations.

A memorandum of a plan for establishing one examining medical board in Scotland, &c., by a professor in Marischal College, was laid on the table.

The following gentlemen were elected a committee to watch over the progress of medical reform, and to take what steps may be

found necessary, and report thereon from time to time to the council, Drs. Webster and M. Hall, and Messrs. Davidson and H. Smith.

The sum of 5*l.* (from the Benevolent Fund) was unanimously voted to a distressed medical man, the case being considered to come within the objects of the charity.

ZOOLOGICAL SOCIETY OF LONDON.

Tuesday, July 26, 1842.

A PAPER was read, entitled "Observations on the Seminal Tubes and Semen of Mammalia and Birds," by George Gulliver, Esq., F.R.S.

Size of the Seminal Tubes, with the Nature of their Contents at different Periods.

This is an interesting subject, because it is so much connected with the habits and economy of animals. The author, after alluding to the valuable labours of Professor R. Wagner, gives an extensive series of measurements of the seminal tubes, which it appears increase in size during the growth of the animal, and even before birth. The sudden enlargement of the tubes in mammalia, when they become capable of reproduction, and of the tubes of birds at the pairing season, was shown by a table, in which was also contained a notice of the state of the testes, and of the contents of the seminal tubes at the different specified periods. In birds, when these tubes become turgid, they are also thinned, their walls being so much attenuated and distended that they are almost ready to burst with semen, contrary to Professor Wagner's observation, that they expand and become thick.

Molecules of the Semen.

These much resemble "the minute oil-like spherules" depicted by the author (in his Appendix to Gerber's Anatomy, p. 103,) as constituting the bulk of the particles found in the juice of the supra-renal bodies. The most common diameter of the seminal molecules is 1-20,000th of an inch, and they vary from 1-35,000th to 1-8000th. The author is of opinion that these molecules are connected with the perfecting of the semen, since he finds that they are very abundant in the seminal fluid of birds and reptiles, just before the testicles become ripe, and wholly disappear or become scanty as soon as the spermatozoa are most completely formed. The author remarks incidentally, in reference to a former notice in the Atlas to "Gerber's Anatomy," p. 59, on the difficulty of determining the exact shape of particles so extremely minute, that many which he has formerly described as spherules may, in reality, be discs, in conformity to some of the elaborate researches of Dr. Martin Barry.

Pigment of the Testes.

In certain birds the testicles are yellow or black. A particular examination of the black pigment, mentioned by the author, in the seminal tubes, or their coats, of the starling, disclosed very distinct pigment ramifications.

Spermatozoa of the Genus Cervus.

The author exhibited drawings of the spermatozoa of the wapiti, red deer, and fallow deer, noticing that he had found the spermatozoa in the testes of the latter animal at other periods than during the rut; and these drawings were exhibited in reference to the extraordinary statements in Sir E. Home's "Comparative Anatomy," vol. v., which have been well commented on by Dr. Davy, in his "Researches," vol. i., p. 338.

Chemical Characters of the Spermatozoa.

The spermatozoa of mammalia are but little, or not at all, affected by nitric, muriatic, acetic, oxalic, tartaric, and citric acids; by earthy, alkaline, and metallic salts; or by caustic alkalies. But the *spiral* spermatozoa of birds are very susceptible of the action of the acetic and other vegetable acids; although the *cylindrical* spermatozoa of birds, as of the common swift, are nearly allied in chemical characters to the spermatozoa of mammalia.

When the seminal fluid contains an abundance of corpuscles, it is quickly made ropy by alkalies and by many saline solutions; an effect which is produced by these reagents on other animal fluids containing great numbers of fresh primary or isolated cells, as more particularly noticed in the Appendix to "Gerber's Anatomy," pp. 91, 96, and 97. In some recent experiments, the lymph-globules were only a little misshapen, after having been kept many days in solutions of muriate of ammonia and other salts.

In the abstract of Mr. Gulliver's paper on the Muscular Fibre (see LANCET, July 16, 1842,) it should have been mentioned that the transverse striæ are observable on the fibres of the heart of some of the larger species of the lower vertebrate animals.

ROYAL ACADEMY OF PARIS.

TREATMENT OF TUMOURS.

THE Paris "Gazette des Hopitaux" of the 26th ult., has given insertion to the following article, for which we have been requested to find a place in this Journal:—

"At a meeting of the Royal Institute of France held on the 9th of May last, and at a meeting of the Royal Academy of Medicine on the 10th of May, Drs. Conquoin and Millardet, his associate, deposited a sealed parcel, to mark the date of an important modification which they have made in their

method of treating scirrhous and cancerous affections and tumours of a dangerous nature, as well as diseases of the uterus. These physicians wishing to give a convincing proof of their assertions, introduced for the purpose of being examined by the latter learned body, an aged female, from whom they had removed, without the slightest accident, five weeks previously, a tumour, of the size of a closed hand, in the cavity of the right shoulder. This operation, which in itself, considering the place in which the tumour was situated, embraced every difficulty which it is possible to meet in the removal of tumours, demonstrates in a manner not to be confuted, the excellence of a method which possesses the immense advantage of dispensing with a cutting instrument, and consequently of avoiding the fatal consequences which so frequently result from its use."

UNIVERSITY OF LONDON.

FIRST EXAMINATION—BACHELOR OF MEDICINE, 1842.

Monday, August 1.—*Morning*, 10 *to* 1.

ANATOMY AND PHYSIOLOGY.

Examiners, Mr. KIERNAN and Professor SHARPEY.

1. DESCRIBE that portion of the basis of the cranium which is bounded anteriorly by the suture uniting the horizontal plates of the superior maxillary and palate bones, and by the anterior margins of the pterygoid processes, posteriorly by the superior transverse ridge of the occipital bone, and laterally by the ridges separating the zygomatic from the temporal fossæ, and by the posterior roots of the zygomatic processes of the temporal bones. Commence the description at the anterior part; mention the openings, with the parts occupying them, in the order in which they are seen, and the attachments of the muscles and ligaments.

2. Describe the inferior maxillary bone, its mode of ossification, and the changes which it undergoes at different periods of life. Describe also the articulation of the lower jaw and its movements, mentioning the muscles by which they are severally effected.

3. Give the anatomy of the eyelids, and of the lachrymal apparatus, comprehending the lachrymal gland and its ducts, the puncta lachrymalia, lachrymal sac and canal.

4. The viscera of the abdomen having been removed, describe the muscles, vessels, and nerves seen on the posterior wall of that cavity. Describe the lumbar plexus of nerves, and the course of its branches within the limits of the lumbar and iliac regions. Describe also the parts relating to femoral hernia which occupy the space included between Poupart's ligament and the margin of the pelvis, as far as they can be seen from within.

5. Give an account of the form and structure of serous membranes in general, the nature of their secretion, and the purposes which they serve.

Afternoon, 3 *to* 6.

1. Describe the articulating surfaces of the astragalus, and the surfaces with which they are articulated. What motions take place in the several joints into the formation of which this bone enters, and to what classes of joints do they respectively belong? Enumerate the muscles of the leg and foot,—first, in the order in which they are met with in dissection; second, classifying them according to their actions; and mention the insertions of the muscles which extend the foot.

2. State the dissection required to expose the course of the deep cervical artery on the posterior aspect of the vertebræ; commencing with the integuments on the back of the neck, and describing the different parts exposed in the dissection.

3. Describe the form, structure, and situation of the submaxillary and sublingual glands, stating the steps of the dissection required to display them *in situ*, and describing the parts immediately contiguous to them.

4. The upper and the posterior parts of the cerebrum, the corpus callosum, with the fornix and velum being removed, and the fourth ventricle being laid open by an incision through the middle of the cerebellum, describe the parts brought into view, commencing the description anteriorly.

5. Give the anatomy of the auricles of the heart; comprehending their situation and connections, their external and internal configuration, and the structure of their parietes. What is the usual weight of the heart in the adult, and how does it differ according to age and sex?

Tuesday, August 2.—*Morning*, 10 *to* 1.

CHEMISTRY.

Examiner, Professor DANIELL.

1. A solution of a salt is contained in a bottle marked A, placed before you with appropriate tests; of what acid and base is it composed? what are their equivalent numbers upon the hydrogen scale? and what is the nature of the changes produced by the tests?

2. A solution of another salt, marked B, is also placed before you with appropriate tests; what is the acid of the salt, what its probable base, its equivalent number, and the nature of the changes produced by the tests?

3. What is meant by the atomic theory? State its leading doctrines, and explain them by examples.

4. How may the chemical equivalent of a substance be determined?

5. What advantage is there in stating the proportions of the ingredients of compound bodies in equivalents over a statement of the same proportions per cent.?

6. What do the following symbols represent:

$$SO_3,\ NH_3,\ HO = SO_4,\ NH_4?$$

and what is the theory to which the equation refers?

7. What general principle do we avail ourselves of for the measurement of temperature, and how is it applied?

8. Describe the construction and explain the action of the electrophorus.

9. What are the forces which may be developed by a voltaic current? Briefly exemplify each when called into action.

Afternoon, 3 *to* 6.

MATERIA MEDICA AND PHARMACY.

Examiner, Dr. PEREIRA.

1. Describe the mode of preparing tartaric acid according to the London Pharmacopœia. Explain the chemical changes which occur in the process. State the atomic constitution of the acid in both the dry and crystallised states. Give the tests by which the acid may be distinguished from other vegetable acids, and by which the absence of the bitartrate of potash in its powder may be ascertained. Lastly, state what are the quantities of carbonate of potash (the granulated salt of the shops), bicarbonate of potash (crystallised), carbonate of soda (crystallised), *sodæ sesquicarbonas*, Ph. Lond., and *ammoniæ sesquicarbonas*, Ph. Lond., which are respectively required to saturate one scruple of the crystallised acid.

2. You are requested to give a botanical description of *hyoscyamus niger*; describing successively the root, stem, leaves, flowers, fruit, and seeds; stating its duration, and its position in both the sexual system of Linnæus and the natural system of De Candolle. Mention the principal symptoms which characterise its operation on the system in both medicinal and poisonous doses. State in what cases its use is preferable to that of opium, and in what doses you would administer the tincture and extract.

3. Briefly state the circumstances which favour the view that the absorption of a medicine is necessary to the production of its remote effects.

4. In what cases are ferruginous tonics to be preferred to the bitter vegetable tonics?

5. What is the specific gravity of *spiritus rectificatus*, Ph. Lond., and of *spiritus tenuior*? What are the relative proportions, by volume, of rectified spirit and water which are required to constitute proof spirit? By what tests is the presence of *oil of corn spirit* in rectified spirit to be detected?

6. What quantities of the following preparations contain respectively one grain of opium? *Confectio opii, pilulæ saponis compositæ, pulvis cretæ compositus cum opio, tinctura opii, tinctura camphoræ composita*, and *pulvis ipecacuanhæ compositæ*.

BOTANY.

Examiner, Professor HENSLOW.

1. Distinguish between prickles, thorns, and bristles.

2. Explain the structure of a cremocarpium.

3. Compare the principal structural differences in the flowers and fruit of clematis, anemone, ranunculus, helleborus, and pæonia, upon which five subordinate groups or tribes of ranunculaceæ depend.

4. What is the chief characteristic difference in the structure of the flowers of plants grouped under the tribes alsineæ and sileneæ?

5. How are the leaves disposed in chenopodiaceæ, and have they stipules or not?

6. How is the origin of the vesicles of the cellular tissue explained?

7. Explain the general process of fertilisation, and describe its peculiar modifications in orchidaceæ. Describe the specimens marked,

8. }
9. }
10. }

UNIVERSITY OF EDINBURGH.

———Licuit, semperque licebit
Parcere personis, dicere de vitiis.

TO THE DEAN OF THE FACULTY OF MEDICINE.

SIR,—The present manner of giving and receiving certificates is a great and sometimes insufferable nuisance; if the examinations at the various boards were more severe, more practical, and more calculated to test a person's amount of good and useful knowledge, what can it matter how he has obtained the same; the real question with the public *ought to be as to the amount*. If the lecturers were good, and had the talent to communicate easily, what they too frequently only *profess*, the student would very naturally select and attend the same; but, Sir, to be forced *to attend some professors!* is a waste of money, waste of time, waste of energy; and as a specimen (notwithstanding our motto, which can be regarded as extending only to the private and not to the public capacity of the professors) let us again bring forward Dr. Home! Your university *requires* attendance upon lectures on the practice of medicine, the lectures *must* be given in an university; consequently, what alternative has an Edinburgh student but to take out *his ticket*; if the student does attend (as

few do) he loses his money, his time, and worse still, gets into careless habits of inattention during better opportunities; if he does not attend (as is the case with the great majority, or they but rarely do), his money is lost without the *shadow* of a return, and he has to send in a false certificate. You *must and ought to know this;* if so, why not rise and look after it? Where is the town council, the so-called guardians of the university? Where is the principal: did he not attend *part* of a lecture to enforce order and attention; did he not slip out of the lecture theatre quietly, and with a smile leave the professor at the mercy of the jeers of the students, well knowing the justice of their case? Where are the students themselves that they do not take some steps to stop the evil? Let them remember "audentes fortuna juvat:" they ought to be, and to consider themselves something more than mere schoolboys. Perhaps I may be answered, that it is hard to deprive a man of a situation and salary which he has had nearly half a century, becoming thereby almost part and parcel of himself; but is not the student's case the harder? From the report of the commission of inquiry into the universities of Scotland, 1830, it appears that the professor of medicine received from his class on average of the preceding five years above 1000*l.* annually. Is not this sufficient to enable a person to save something for old age; if not, grant a retiring salary, or *some means you must take*, Sir, to remove the evil of having antiquated and inefficient professors, or you will lose your students, and deservedly so. Eloquent and talented lecturers, as Alison, Christison, Ballingall, &c., though they may fill their own professorships well, cannot make up for the inefficiency of a few of their brethren.

On a future occasion I may probably make a few additional remarks on the certificate system, lecturers, infirmary, examinations, medals, &c., and in the mean time I must subscribe myself as your very obedient servant,

JOHN BULL,
Graduate of your University.

July, 1842.

LYMPH GLOBULES OF BIRDS.

IT is well known that the blood of the vertebrate animals contains, besides the red discs, a few pale globules, which have commonly been regarded as those of lymph. In birds, however, I have found that the majority of the globules of the juice of the lymphatic glands are rather smaller than the pale globules of the blood; and the same fact is observable in mammals. Yet the descriptions since Hewson's time of the lymph-globules of birds have always been drawn from the pale globules of their blood.

This distinguished man states that the particles of the fluid of the lymphatic glands of birds are oval, like the nuclei of their blood corpuscles. In the "Philosophical Magazine" for Feb. 1840, I described the lymph-globules of the Napu musk-deer as hardly differing from those of man, although the blood-discs of that little ruminant, as I had discovered and published in November, 1839, are the smallest yet known; and although the camelidæ have oval blood-discs, I found that the globules of the thymus, of the lymphatic glands, and of the pus of these animals, had the usual circular figure, and nearly the same size as the corresponding globules of the mammalia. (See LANCET, 1840-41, vol. ii., p. 101; and Med. Chir. Trans., vol. xxiii.) It was to be expected, therefore, that the lymph-globules of birds would have a similar form, and such I have ascertained is the case.

The following table exhibits, in fractions of an English inch, the size of the lymph-globules of birds. The magnitude does not differ much, and perhaps further observations may show as much difference in the size of the globules of any one bird, especially if examined at various seasons, &c. In a few instances from one to five of the globules were seen to be enclosed with granular matter in a cell. It will be seen that the lymph-globules of birds are a little smaller than the same globules of mammalia:—

Columba Livia, *var.* Briss....	1/3171
Turdus musicus, Linn.	1/3000
Gallus domesticus, Briss.....	1/3167
Strix flammea, Linn.	1/3127
Ardea cinerea, Lath.....	1/3125
Corvus frugilegus, Linn.	1/3053
Corvus monedula, Linn.	1/3235
Sturnus vulgaris, Linn.....	1/3132
Garrulus glandarius, Flem. ..	1/3174
Corvus Pica, Linn.....	1/3001
Pale globules of the blood	1/3333
Fringilla Chloris, Tem.....	1/3231
Fringilla domestica, Linn. ...	1/3243
Emberiza citrinella, Linn.....	1/3173

The above are all average size, reduced from a great number of observations. In the magpie (C. Pica) the relative size of the globules of lymph and the pale globules of the blood is shown.—*Mr. Gulliver's Contributions to Minute Anatomy*, Lond. and Edin. Philos. Magazine for June, 1842.

TYPHUS FEVER IN PARIS.

THIS fever is raging with great severity in Paris at the present time. The most successful treatment is that with sulphate of quinine in large doses.

IRISH MEDICAL BOTANY.

To the Editor of THE LANCET.

SIR,—Few persons, I believe, are aware that the roots of biennial plants in Ireland are in their most perfect state in the autumn of their second year's growth. We all on this side of the water know that the roots of biennial plants in England are all dead in the autumn of the second year of their duration, as we see in the turnip and carrot, two of the most familiar examples of this kind of root; in fact, in England, when the period of a plant's duration is completed, it is no longer possessed of vital existence, its juices are all gone, and the cellular woody fibre is dry and lifeless, and fit only for fuel; yet this, it seems, is the period at which the medical men in Ireland choose for gathering the roots of biennial plants; how different must be the soil and climate of the sister Isle. The following quotation is from the "Elements of Materia Medica," by Drs. Bellingham and Mitchell, of Dublin, two professors of botany, and worthy of credit:—

"*The roots of biennial plants should be collected in the autumn of their second year's growth, or the year in which they produce seed.*" Lest there should be any mistake, these gentlemen have stated the rule twice and in different terms—second year's growth, year in which they produce seed; therefore it cannot be an error of the press, or an accidental error in composition. As I consider the fact interesting in a medico-botanical point of view, I have thought proper to direct your attention to it. I am, Sir, your obedient servant,

MEDICO-BOTANICUS.

London, July 27, 1842.

REUNION WITHOUT INFLAMMATION.

MEDICINE, as a science, has not less to learn than art from the general study of deformities. It is a fact of experience that the division of the tendo Achilles contributes to the cure of club-foot. This, however, does not lead us far; but when contemplated as a general fact, bearing upon all the muscles of the animal system, it leads at once to the conclusion, that tenotomy affords us means of removing an obstacle hitherto insuperable, in reducing portions of the skeleton to their normal position, so that instead of a practice devoid of sound philosophical principles, we arrive at a general rule, applicable to all analogous cases known, or to be known—in short, to a true therapeutic principle. Another example, drawn from the division of muscles and tendons, is afforded by the fact, that in some operations of tenotomy there is an immediate reunion without inflammation or suppuration of the divided tissues. This leads at once to the recognition of a principle in surgery of the first order. And to appreciate the principle involved we have only to remark that wounds thus cured have been subcutaneous, and removed from contact with the air. This results whether the tendons and muscles divided have been for the relief and cure of club-foot, wry-neck, or deviations of the spinal column. And on a much more extensive scale have these operations been performed on animals, with the same uniform results. And in consequence of such effects having been observed to arise from subcutaneous operations, the practice has been introduced of bringing all wounds and operations of surgery, as much as is practicable, under the influence of the same law, as a sure means of obtaining an immediate reunion. And it enables us at once to explain circumstances which before were very obscure and imperfectly understood, notwithstanding the great light thrown on this subject by the labours of John Hunter, connected with the cicatrisation and reunion of wounds, and of the functions of the various fascia, which from a mistaken apprehension of their use in the animal economy, were, by Delpech, denominated purogenic membranes, and very obscurely seen by Bichat; one of the principal uses of which evidently is, to prevent inflammation, by protecting denuded surfaces from the action of the atmosphere. —*Dr. Brigstocke on Orthopædic Surgery.*

THE LAW.—*To the Editor.*—Sir, your correspondent, "A GENERAL PRACTITIONER BY PROFESSION," in calling the attention of the profession to a late case in the Court of Queen's Bench (which, by-the-by, he has mistaken in some of the leading points that he professes to state), has omitted to direct your attention to the fact, that the trial of that case, while it could in no event have answered any pecuniary object worth a minute's consideration, was calculated to decide the very material question, whether the courts of law will ratify the change of practice which the College of Physicians has of late adopted in granting its diploma to a surgeon previously practising as such, without first requiring him to give up his diploma as a surgeon. Lord Denman, it appears, adopts what I understand to be your view, that a man is not to be deprived of a fair remuneration for his services because he has taken a diploma, and adopted the profession of a physician, when the services rendered are, properly, of a surgical nature. I am, &c., AN OCCASIONAL FREQUENTER OF THE COURTS.

THE PLAGUE.

WE perceive by a Cadiz journal that the plague has made its appearance in Portugal. The Board of Health of Seville has taken the necessary precautions to prevent its extension.

MEDICAL REFORM IN SCOTLAND.—We have received from a correspondent a printed document entitled "Memorandum of a Plan for establishing one Examining Board in Scotland for licensing General Practitioners in Medicine and Surgery, composed out of all the existing Examining Bodies in that part of the United Kingdom; with Suggestions for the improved Regulation of Medical Degrees. By a Professor in Marischal College and University of Aberdeen." In forwarding it the author says, in a note to the editor, "One examining board for each division of the United Kingdom, to pass whose examination shall entitle to practise in any part of the United Kingdom, seems to be the general wish of the profession. The enclosed paper is intended to show how, beneficially to the public, this wish may be accomplished, without producing any serious injury to the existing examining bodies; and although the plan has been framed with reference to the circumstances of Scotland, possibly it may afford hints applicable to England also." The document is printed, and perhaps to be had at 11, Portugal-street, Lincoln's Inn-fields.

MEDICAL REPRESENTATIVES.

THREE medical men, in addition to those at present in the House, take their seats in the Chamber of Deputies at the present election. They are, Professor Bouillaud; M. Dezeimeris, librarian of the Faculty of Medicine of Paris; and Dr. Terme, mayor of Lyons. The medical profession of France look forward to the introduction of some useful measures of reform as a consequence of these elections. The conversion of the Ecole de Medicine into a College of France is among the benefits that are looked for.

DEATH OF BARON LARREY.

OUR readers will learn, not without feelings of regret, the decease of this veteran of surgery. He died at Lyons on the 25th of July, at the advanced age of seventy-six years, and will be buried in Paris.

DEATH OF PELLETIER.

THIS distinguished chemist, professor in the School of Pharmacy, died during the past month, after a long and painful illness. He rendered great service to science by his researches in association with M. Caventon on the vegetable alkalies.

MESSRS. WHITNEY (Shrewsbury) have, since our last notice, forwarded to us an account of the mode of making their "liquor sarsæ essentiæ comp.," and a specimen of the article. In its immediate solubility in cold water, it possesses a marked advantage over the ordinary extract. The chemical process appears to be well calculated to get rid of the starch and albumen, while the flavour and medicinal properties are retained. Whether in remedial virtue it is superior to the less soluble extract, experience alone can decide.

ROYAL COLLEGE OF SURGEONS IN LONDON.

LIST of gentlemen admitted members on Friday, July 29, 1842:—H. P. Freeman, B. Clarke, W. Polwell, R. George, F. J. Robinson, H. B. Evans, T. Boycott, H. M. Macpherson, A. Lacey. Admitted Monday, August 1, C. H. Moore, W. N. Spong, E. Griffith, H. E. Norris, J. Morley, W. H. Pettigrew, H. Neville, E. Miller, J. A. J. Martin, W. T. Billings.

BOOKS RECEIVED.

The Cyclopædia of Anatomy and Physiology. Edited by Robert B. Todd, M.D., F.R.S. Part 24. Containing Mucous Membrane Muscle and Muscular System; Myriapoda; Neck. London: Sherwood and Co.

The Cyclopædia of Practical Surgery, embracing a complete View of all the Departments in Operative Medicine. Edited by William B. Costello, M.D. Part 11. Containing Fistula; Fracture. London: Sherwood and Co.

Statistical Illustrations of the Past and Present State of Lancashire, more particularly relating to the Hundred of Salford. By Henry Ashworth. London: Madden and Co. 1842. Pamphlet. Pp. 24.

Suggestions as to the Expediency of Erecting a Public Asylum for the Insane belonging to the Counties of Cumberland and Westmoreland. By Richard Oliver, M.D. Carlisle: Journal Office. Pamphlet. Pp. 14.

TO CORRESPONDENTS.

"PHRENOLOGICAL MESMERISM."

An Observer in a communication under the above title commences his letter as follows:—"It is now about forty years since Mrs. Hamilton, in her 'Memoirs of Modern Philosophers,' put an extinguisher on the brood of charlatans and fanatics that infested society at that time; and it is much to be desired that *some one gifted with equal powers of reasoning and ridicule would undertake the task of treating in the same way, the equally pestiferous vermin that threaten to spring up amongst us at present.* For as vanity, presumption, and ignorance are the roots from which error and folly have their origin, we shall never cease to have a luxuriant crop of the latter so long as the former exist, varying

in form perhaps, and disguising itself under different names, but still essentially of the same character. And thus it will continue to be, as Huxham says, 'so long as the majority of the world are fools,' and all sorts of pretension and quackery are encouraged by the credulity of mankind! Nor does it avail much, though the moralist may frown or the satirist censure. Though crushed and trampled on to-day, the pestiferous thing springs up as luxuriant as ever to-morrow.

> 'Destroy his fib, or sophistry—in vain;
> The creature's at his dirty work again.'

These reflections have originated in the scenes that occurred at the late meetings of the Phrenological Society," &c.

After describing the pretences of the "mesmerisers," both phrenological and simple, the writer writes as follows, the only passage, in addition to the above, which we quote for reasons which shall be described immediately afterwards:—

"Now these, and all such pretensions, the gentlemen of the medical profession treat with utter scorn; and they have the most unquestionable right to do so, since they have never failed, when an opportunity presented (by the rashness or credulity of the operators), to detect the fallacy, and blow the whole fabric of imposition to atoms. Did not the French Institute appoint a committee of their own body to examine the subject, not long ago? and did not these gentlemen, some of the most eminent of the profession, after a careful examination, show, in the most satisfactory manner, that all the pretensions to *clairvoyance*, community of sensation, &c., were *mere humbug, and that there was nothing in the cases brought before them that was not easily explained on ordinary principles?* and did not you, Mr. Editor, do *just the same thing in the case of the Okeys?* Dr. Elliotson had been vaunting the extraordinary gifts of these clever hussies, and exhibiting their wonderful powers to admiring and *believing* spectators, when, in an evil hour for his credit as a philosophic inquirer, he ventured to submit the case to your cross-examination. I need not say *how completely it broke down in your hands—how quickly the imposture was detected by a few simple tests;* and yet these girls had hoodwinked the only clever man in the party for a long time, because he was more anxious to establish what he had determined on believing, than to discover the truth itself! And thus it is with the whole race: their great object is to get a subject on whom this abnormal state of the sensorium can be easily produced—some nervous or hysterical girl for instance—and when after many trials, and an initiatory course, they have succeeded in eliciting some of those effects that occasionally accompany disturbed states of the nervous system, they, in utter ignorance of the laws of that system, have recourse to some mysterious agency as the cause of the whole, viz., the volition of the mesmeric conjurer himself!"

Our correspondent writes a most excellent commentary upon phreno-mesmerism, Okeyism, and husseyism, labouring—as it would seem at the outset—under a conviction that such criticism was needed. Yet in the second extract above made, he proves his perfect sensibility that the frauds and impositions, and absurd credulity of the whole set of "pestiferous vermin," had already been effectually exposed, and the parties themselves reduced to their proper rank in public estimation. We stand excused, therefore, by his own showing, from publishing his communication. The fraud was laid completely open to view by the experiments in Bedford-square; and no revival of the matter, whether in phrenological societies, or in drawing-rooms, or in town-halls, demands a line of more serious notice than is taken of it in the present notice to our correspondent.

Scrutator may obtain a copy of the Private Lunatic Asylums' Bill, or of the Act, when the Bill has passed, through an order given to any bookseller, or at the Queen's printers in London.

The statement respecting hydrophobia, from Camberwell, cannot be inserted with any advantage to medical science.

A Member of the Cornwall Medical Association.—Every one of such payments,—if the statement be correct,—has been illegally made, and charges for them in the accounts would be a fraud upon the county.

Dr. Green's communication shall appear in an early number.

A Practitioner in the Edgware-road should send us one of the circulars, or furnish us confidentially with his name, as a pledge of the authenticity of his statement.

The circular sent by *Messrs. Morison, Moat, and Co.*, has appeared as an advertisement in the newspapers, and if the parties think proper, they may, by application to the publisher, have it placed as an advertisement on the cover of THE LANCET.

BRENTFORD MEDICAL ASSOCIATION.—The following resolution was unanimously agreed to at a special meeting on July 7th, viz.:—"That the members of the Brentford Medical Association pledge themselves not to accept office under the board of guardians, without the express sanction of the society at large, and also record their determination neither to aid nor assist, professionally or otherwise, any person, whether a resident practitioner, or one introduced by the guardians, who shall so accept, or who shall enter into any arrangement that can be considered derogatory to the character and respectability of the profession."

Mr. Greave's communication has been received.

Mr. Humble's paper shall appear in our next.